THE 'ARCHETYPES' IN A LITTLE MORE DETAIL

A little explanation of the reasons for choosing the human drives listed in "How Many Archetypes".

LEVEL Psych 1.

NUTRITION

So obvious as to need no justification. Or so one would think, but.....

The great names in depth psychology, Carl Jung and Sigmund Freud, probably made more effort than anyone else to explain human nature. Between them, they uncovered the world of the unconscious mind, of powerful drives and ways of perceiving reality that create our personalities and, hopefully, aid our healthy psychological development. But even they didn't always look in the right places. They both overlooked the all-pervasive need for eating and drinking. There is actually a little discussion of the subject in their correspondence, with Jung suggesting that some mental illnesses might be caused by frustration of what they called the 'alimentary drive'. But Freud quickly dismissed the suggestion, on the basis that *'obsessions and other problems related to eating 'can easily be explained...by the sexual component of the alimentary drive.'* (27.10.1906: Freud-Jung Letters). Thereafter they dropped the subject.

This ignoring of the 'alimentary drive' by Jung is quite extraordinary when one considers his great interest in and knowledge of mythology, religion and symbolism and the importance of food in particular to human rituals, rites of passage and so on; from the worship of corn goddesses, to bread and wine in the mass, and to St. Paul's instruction to Timothy to *'drink no longer water, but use a little wine for your stomach's sake'*. So why the neglect of such an important area of human life?

The reason, to paraphrase the great humanist Viktor Maslow, is that probably neither Jung nor Freud ever missed a meal in their lives. With their great wealth, their bourgeois, even luxurious, life styles and their cooks, Freud and Jung were gastronomically sated. Freud was sexually frustrated – hence his obsession with this area of life – and Jung was both perpetually disillusioned with conventional religious belief and fascinated by religious drives. Satiation makes one lose interest in a drive, but deprivation makes one interested.

Maslow's *Man's Search for Meaning* details his experiences in a concentration camp and in it, the author describes how men *in extremis*, retain the need for meaning, but lose the sex drive almost completely and develop overwhelming obsessions with food. They dream, not about women, but about potatoes with butter. This is hardly surprising. Almost all of us spend far more time eating and drinking than we do making love or undergoing spiritual experience; we can spend hours of our day thinking of food, shopping for it, preparing it and, if we can't eat for four hours or so, we begin to

experience discomfort. There are probably more books published about food than about either sex or religion; it is an ongoing intellectual preoccupation for our species. Hunger and thirst, therefore, are drives in their own right and our ways of satisfying them represent and symbolise the 'god' of full stomachs, who is neither Eros nor Christ but, maybe, Dionysus.

And we all know, or we should know, that a healthy personality has some basis in our eating habits. If psychologists don't know this, then many writers (and others) certainly do. Well over a hundred years ago, Jerome K. Jerome wrote very precisely upon the subject:

"How good one feels when one is full - how satisfied with ourselves and with the world! People who have tried it, tell me that a clear conscience makes you very happy and contented: but a full stomach does the business quite as well, and is cheaper and more easily obtained...It is very strange, this domination of our intellect by our digestive organs. We cannot work, we cannot think, unless our stomach wills so. It dictates to us our emotions, our passions. After eggs and bacon, it says work! After a cup of tea, it says to the brain, 'Now, rise, and show your strength. Be eloquent, and deep and tender'...After hot muffins, it says 'Be dull and soulless, like a beast of the field'.... Reach not after righteousness, my friends; watch vigilantly your stomach, and diet it with care and judgment. Then virtue and contentment will come and reign within your hearts, unsought by any effort of your own; and you will be a good citizen." (From *Three Men in a Boat*)

So consumption underpins all animal life. It relates to all the drives. For example, tool making and the growing of plants that enable food crops. It is important to socialisation and a lack of enough consumption is often a reason for aggression. Consumption even works its way into religious belonging. The process of eating feel good and the reward of consuming is a happy full stomach and the removal of the bodily unpleasantness of hunger.

The many positive outcomes of consumption, then, include bodily satisfaction and , often, sociability. The negative outcomes include denial of the drive (*Anorexia*) and a negative attitude to an overwhelming drive (*Bulimia*), as well as uncontrolled over-use, leading to negative health outcomes and even Darwin Awards.

SEX

Another drive that is found in all multicellular animals and underpins much of human life. It is almost universally practiced by humans (but not quite).

A Note on Celibacy

One of the least helpful practices of some human groups is that of celibacy for the brightest and best. For example, in the Roman Catholic Church, where young males and females are selected, in part at least, for their fine moral makeup, then taken out of the community and pressured to practice celibacy and not to pass on their genes. This would certainly create some evolutionary pressure away from the biological characteristics of the selected group. Perhaps the church should be given a collective Darwin Award.

The basic object of the sex drive in all vertebrates is to bring together the germ cells of two individuals, to unite the genetic material from the two and thus produce the next generation of the species. Different species do all sorts of things to achieve this end: from tiny male spiders risking death on the web of a gigantic female, to salmon undergoing marathon obstacle-ridden journeys to return to the streams of their youth simply to spawn and die.

In humans, though, as with most higher vertebrates the usual sequence is some form of courtship, followed by sexual union and then the production of young. In most species the pattern of behaviour is fixed: but in humans there is an almost infinite variety of sequences. From 'dogging' in a pub car park (minimal courtship) to reciting the sonnets of Shakespeare (likely long courtship). From the (morally neutral) viewpoint of evolution, it doesn't matter which path is taken. All that matters is successful mating and the passing on of genetic material.

And, to this end, it is necessary that mating should be pleasurable (sorry, Graham Greene) and ended in a satisfying climax. For some, the best and most important experience of one's life. Otherwise, why would we do it?

The positive outcome of the sex drive is, then, passing on of one's genetic material. It also creates bonding between individuals and therefore, to some degree, is a reinforcer of social drives. Perhaps more importantly, one of the most recognised (and sometimes celebrated) relationships is that between the sex drive and religious behaviour. Anyone who has been to a few evangelical meetings will surely have noticed the erotic nature of some of the emotions aroused. John Steinbeck and Desmond Morris certainly did.

From **Steinbeck's** *Grapes of Wrath*

Casey explaining why he can no longer be a preacher: "I use ta get the people jumpin' an' talkin' in tongues an' glory shouting....An' then - you know what I'd do? I'd take one of them girls out in the grass, an' I'd lay with her. Done it ever' time..... the more grace a girl got in her, the quicker she wants to go out in the grass."

Desmond Morris, cites St Teresa on her description of an assault by the archangel Gabriel (in a dream or vision): the angel thrust his spear into her bowels, the pain being great, but the ecstasy being so much greater that she would never wish for it to cease.

As regards archetypal illustrations of the (results of the) sex drive, there are hundreds in Greek mythology alone: from Oedipus to the priapic Zeus, to Persephone. It is interesting to note, though, how many of these stories involve pairs of star-crossed lovers (Tristan and Iseult, Romeo and Juliet, Pelleas and Melisande *etc.*) whose overwhelming erotic drives prove fatal. Darwin awards all round! So perhaps there is a lesson here about preferred limitations for eros.

AGGRESSION

Another almost universal human characteristic, defined in all sorts of ways and subdivided by many authors (perhaps beginning in the1980s by Ashley Montague) into at least 40 categories. It should be remembered, though, that humans are perhaps the least aggressive (individual to individual) of all the primate species. No other primate species could be induced to live in colonies of millions - comparable in numbers to the social insects - without absolute mayhem breaking out. And if you take the Australian murder rate to be about 400 p.a. (more or less), then in a randomly-selected human group of 100 (about the norm. for pre-history) the group would have a murder about every 500 years! A thing of myth, legend and dread. Something that we fear so much that we are fascinated by it. The reader might find it interesting to read Montague's classic *Human Aggression* (1980) and the debate that followed. Or perhaps Alfred Adler's theories of the striving for superiority or perfection.

Here we will look only at acts and feelings of aggression by individuals, against objects and other individuals. In as general a context as possible. The family or collective contexts will not be examined. Nor will male *vs.* female aggression -too complex a subject and something that relates too closely to psychopathology.

As for archetypal images of aggression, one has only to look at the world of mythology. The Greek gods, for example, were enmeshed in a world of fighting, sex and (slightly less often) feasting. The big three in action! Ares and Athene were the gods most strongly associated with warfare, with the female (Athene) interestingly able to give the male (Ares) a smacking when the two were in conflict in the *Iliad*. Note that the Greek gods also did have time for all the other drives, as we shall see. From the making of pretty swords, to ritual worship of the gods, visions of the gods and so on. Other mythologies tend to be even more focussed than the Greek on violence: From the abysmal Beowulf to the mindlessly violent *Book of Mabinogium*. Which tells us perhaps that aggression is a part of our inheritance that cannot be entirely removed. But how big a part is a question that is still unresolved.

The nature of the rewards of aggression has been debated since, at least, the 1970s, when many ethologists, biologists, film makers and others (for example, Desmond Morris, Konrad Lorenz, Sam Peckinpah and Stanley Kubrick) maintained that human aggression was intrinsic, overwhelmingly strong and had to be expressed -for example by playing violent sport. This, despite all the evidence that practicing aggressive behaviour merely leads to habituation and often psychological distress, while non-practice leads to a lowered need for aggressive behaviours later on, rather than to a build up of undischarged aggression.

Anthony Stevens on The Discrediting of Inherited Instincts.

For many years, the idea that inheritance play a part in human behaviour was discounted by Social Scientists and Academia in general. This because of the bad reputation of Social Darwinism. Social Darwinism took some of Darwin's ideas - for example The Survival of the Fittest and The Struggle for Survival - too literally and applied them in an extreme form to human society. These ideas were used to justify such practices as the extermination of 'primitive' peoples (most famously by Hitler): eugenicists used them to justify selected euthanasia, militarists used them to justify aggressive warfare, and so on.

These ideas are discussed in some detail in *The Two Million-Year-Old Self* by Anthony Stevens.

Aggression can be related to several other drives. It is generally, of course, negatively related to social drives, but is most often clearly positively related to religious drives, especially religious belonging. This is discussed in more detail in the section on religious belonging.

TOOL-MAKING

The ability and wish to make tools is one of the most important characteristics of our species. It is also unique to our species in all but the simplest of examples. It is possible, famously, because of our possession of the opposable thumb (which allows us to grasp and hold objects in the hand). Although many other animal species (including some dinosaurs) have possessed, or possess opposable thumbs, none are well-crafted as those in humans and none have been accompanied by the mental capacity to make a full use of the ability. Tool-making actually predates our species, having been found, for example, in the remains of *Homo habilis* about 2-3 million years ago; before bipedal walking. Early *H. sapiens* used tools from about 400,000 years ago - 2-3,000 generations ago and plenty of time for evolutionary change. Archaeologists will distinguish the level of development of an early human civilisation by the tools found with the other remains.

The advantages of tool-making are obvious. From cooking pots to arrow heads to digging tools. They make food more obtainable, storage possible and clothing and housing improved. For all of which reasons a good tool-maker might be a high status friend or partner! Tool-making would also support the development of the ability to imagine - to visualise a tool before making it and long-term memory (where did I leave it?) among other things.

There are obvious relationships between tool-making and several other drives. For example, Consumption (making roots and tough meat available for food and thick animal pelts available for clothing): Social Drives and Growing plants (an increased food supply allowing for larger group sizes and more permanent group location): and perhaps the increased long-term memory and imaginative ability would have gone hand-in-hand with The Need for Knowledge.

Tool-making today is, of course, still as important as ever. But, apart from practical usefulness, the drive is often subsumed into a huge variety of technically useless variants. Model train making, vintage car polishing, tatting, model ship making, diorama creation, tool shed tinkerings and a huge number of similarly pleasurable ways of passing the time. So far as I can tell, the reward for many of these activities is more in the doing/making than in using the finished product. The tinkering is the thing. This is certainly something with which the *Men and Sheds* movement is familiar.

In Mythology and Archetypal Psychology, tool-makers get a relatively poor press. The classic tool-maker in the Greek Pantheon is Hephaestus, who makes swords and other metal objects for the rest of the gods. But he limps, has an unfaithful wife and is generally an object of fun for the others. In Personality Theory, too, tool-makers are most often Sensing Types and despite many denials by Intuitives and others are regarded as hewers of wood and drawers of water - not really 'officer material'. It's impossible to be sure, but I would say that the Tool-Making Drive is felt strongly in about a third of humans: many of us don't feel the drive at all. As with all the drives, the degree of expression, and also the skill of expression, varies enormously from person to person.

MUSICOLOGY

Or interest in music. Love and/or practice of music is another drive that is found in every human group. It is our species oldest form of expression; older than language or art. Judging from what we know of the evolution of the throat, vocal chords, tongue and palate, where speech goes back about 80,000 years, the structures necessary for music were present about half a million years earlier. Music, then has co-evolved with the human brain: it is encoded into us - body and brain. Written in the core of our being, according to Menuhin and others.

The drive to music, then, is an exemplar of a human drive. It is partly inherent and partly consciously organised. Some love of music is present in the great majority of humans, but the degree of this love and the ability to make music vary enormously from person to person; and from the very beginning. This said, we always apply rules to musical expression and these can vary enormously - from Bach to Reggae to Plainsong. In this we are like many species of songbirds: the young birds often inherit a basic, simple, form of the species' song, but then embellish it by listening to the local variant sung by neighbouring birds.

It's difficult to draw conclusions about the evolutionary advantages of musicology. Certainly, music touches and arouses important feelings - especially those feelings for which there are no words in English. Welsh music, for example has Hwll and generates Hiraeth (look it up). Operatic arias, too, can generate enormous emotion, even when part of a work full of idiotic plotting and words that are simply too silly to ever be in a stage play. The music is the thing, not the words, as every fan of Country and Western knows. Perhaps the main effect of music is to underpin other drives.

Music, then, is strongly related to Religious Experience. It can overwhelm our conscious brain states, leading to a sense of something larger than oneself (God to the religious, the Self to Jung) and of being a part of a greater whole. It is at the core of almost all religious rituals and worship.

Music is also strongly related to Sociability. It cements the identity of individuals with the group, creating a "community of strangers". As at the Millennium Stadium during a Wales-England rugby match. There is a danger here of course. Music can also cement the individual to violent group behaviours and/or to very negative group beliefs. It is, in part at least, the cement that society and social mores are built around - for good or evil. As Confucius said "character is the backbone of our human culture: Music is the flowering of culture".

Finally, music is - inevitably - related to tool-making. From the earliest drums and bone flutes on.

The rewards of music include the social effects, the pleasure of harmonising, the emotions aroused and the sense of completion that great music creates.

A couple of references.

The Music of Man. Menuhin, Y and David C.W. Methuen

The Music Instinct: Science & Song. Elea Mannes. Mannes Productions Inc.

RELIGION

Religion is defined in *Wikipedia* in this Way.

"A religion is an organised collection of beliefs, cultural systems and world views that relate humanity to an order of existence. Many religions have narratives, symbols and sacred histories that are intended to explain the meaning of life and/or to explain the origin of life or the universe"

This is OK so far as it goes, but is rather dry and sounds like an intellectual debate. Most religions are all-encompassing, emotion-laden world views that take over individuals, groups and civilisations, turning them into unquestioning servants. So far as we can tell, *Homo sapiens* has been religiously oriented at least as far back as the time of rock paintings. So, in a little more detail.

A religion will have a set of unchangeable moral values, a strict list of acceptable behaviours and an unarguable explanation of the origins of the world and of humans.

Religions nearly always involve: a comprehensive and unchallengeable set of beliefs, covering the universe, humanity etc; the declaration of truth, rather than a search for it; the dehumanisation of non-believers or believers in a rival religion (or even a rival branch of the same religion); a concept of god - or the god archetype; experience of the transcendent. Believers will also be required to exercise suspension of disbelief - called having faith - in order to believe in the (often daft) statements made by the religion. An example of this is an American presidential candidate who believes in the utterly absurd statements of Joseph Smith (Mormonism).

Religions also often show strong or extreme aggression against rival religions. Possibly a majority of wars have a basis in religion (as compared to, say, scientific theory or psychological orientation). Exclusiveness and the humiliation and transformation of would-be adherents is also common. As the Crusader Hymn put it:

"All I am I give to Jesus! All my body, all my soul.

All I have, and all I hope for, While eternal ages roll."

(Golden Bells, no.276: The Crusaders were a British, evangelical organisation in the 1960s. I have no idea if they still exist).

From an evolutionary viewpoint, religion can be seen to satisfy the (inbuilt) human need for certainty in an inexplicable and frightening world. And - usually - the reassurance that death is not the end forever.

"Out of the fear and dread of the tomb, Jesus I come, Jesus I come!

Into the joy and light of thy home, Jesus I come to thee!" (continues)

(Golden Bells, no. 229).

Religiosity seems to be more clearly connected to quite a lot of other drives than any we have discussed so far. Dawkins, in *The God Delusion*, makes much of this and posits that, as a result, religiosity should be regarded as an accidental by-product of the interactions of other drives. But, as we have seen, all the drives interact and take over aspects of each other. This in no way invalidates them: it just makes it more difficult to describe them in isolation.

The connections of Religiosity to other drives include the following:

Sex. See also elsewhere. Very powerful and often equally powerfully denied, or openly repressed. Anyone who has watched an evangelist like Jimmy Swaggart discoursing on the difficulty of "wrastling with the demon of lust" will sympathise.

Music. An almost universal basis for religious worship. Much of the world's great classical music contains a religious statement.

The Drive to Knowledge. Religion has a superficial relationship to scientific inquiry. Both can reassure humans in an unknown and terrifying world. But, where science sees knowledge as ever-changing, religion sees knowledge as generally something settled for all time.

Consumption. There is often room for food and drink in religious ceremonies. For example, the Christian mass with its cannibalistic drinking of God's flesh and blood.

Aggression. Perhaps the strongest relationship of all. From the Spanish Inquisition to ISIS, religions have a long and savage history of the dehumanising and often the extermination of non-believers and/or sinners of various sorts. The dreadful imagination that has gone into the crusades, pogroms and wars associated with religion is sometimes almost beyond belief.

Social Drives. Religion has often provided a sense of community and a structuring of that community, that goes with an ongoing description of the world. The Catholic Church - possibly the most hierarchical organisation in the world - is a good case in point.

Other. From a Freudian viewpoint, the concept of God provides a strong, comforting and all-powerful parent figure, for those in need of this. From a Jungian standpoint, one could argue for the projection of the Self as a god-figure and the identification with the Child Archetype on the part of worshippers.

TWO KINDS OF RELIGIOSITY

In a ground-breaking piece of research, Dr. Dasha Bliss in Adelaide has studied the degree of religiosity in adult humans. Somewhat to her surprise, she found that there seem to be two kinds of religiosity. Religious Belonging (RB) and Religious Experience (RE) (as described below). Subjects ranged from low to high on each parameter, but there was no correlation between scores on the two. That is, an individual might score low or high on, say, RB, but this was not a predictor of their score on RE. The two approaches to religion were quite separate. As a result, they are described briefly below and measured separately in the quiz.

RELIGIOUS BELONGING

A Word On Religion From Lawrence Durrell (in *Justine* in *The Alexandria Quartet*)

"{of Balthazar} He will never understand that it is with God that we must be most careful; for He makes such a powerful appeal to what is *lowest* in human nature - our feeling of insufficiency, fear of the unknown, personal failings; above all our monstrous egotism which sees in the martyr's crown an athletic prize which is really hard to attain."

Religious belonging (RB) involves activities in support of a religion/religious group. Regular church attendance, acting as a server, perhaps belonging to a choir and so on. There are positive and negative aspects.

The reward for RB lies in the process. A sense of belonging/safety. A sense of meaning in life and of answers to all life's problems - often the mitigation of the fear of death. The proportion of humans who relate positively to RB can be very high, especially in stressful times. From an evolutionary point of view, RB can be said to give groups solidarity and the ability to work together. Of course, the need to believe in an all-powerful, all-loving god has overtones of the remnants of childish submissiveness - parental complexes in fact - but this could be a case of neuroses finding a genuine use in human behaviour.

The most obviously negative aspect of RB is its clear and close relationship to nationalism and racism. There is the absolute loyalty demanded of members, the identification with the church/country/movement and the classification of non-members as sinners/aliens/sub humans. This can lead to aggression on every level. The religious basis of perhaps a majority of wars is well documented.

Of course the necessity to believe absolutely in often quite absurd statements and ideas often demands an abnormal level of suspension of disbelief (usually called 'having faith'). This often causes excessive stress, if one is to believe the writings of the religious, from Adrian Mole, to C.S. Lewis to Graham Greene.

At an archetypal level, RB usually invokes images of the Self (identified by Jung and others as the God-image), accompanied by the Great Father and/or Great Mother.

RELIGIOUS EXPERIENCE

Religious Experience (RE) refers to ecstatic experience: becoming aware of the numinous, of god or other holy beings. As with music, there is a sense of being in the presence of something greater than ego-consciousness. Jung asserted that RE was actually a vision of the self (or psychic totality) by the ego.

For some, especially members of evangelical groups, a person is not truly religious unless they have experienced RE. There are a variety of techniques that are used to achieve RE, most famously meditation, but also flagellation, starvation, freezing and a variety of other ways of painfully inducing a state of altered consciousness. RE is a *sine qua non* for shamans, who have to be able to travel to the "other (inner) world" on behalf of a client or group.

The incidence of RE is much less than that of RB. It often requires a lot of work and (initially, at least) of time. It also tends to be a solitary activity (suitable for introverts), although, with evangelical groups, it can be highly infectious.

All human groups have members who specialise in RE, so there must be an evolutionary advantage. Most obviously, shamans and others may have the ability to reconcile their 'patients' with their inner world when their ego-mediated control of the outer world is wobbly. And to tell the great stories that encapsulate the group's world view: preferably is a state of RE.

The reward for RE is the experience itself: the feeling of the numinous. This is also arguably the most positive aspect of RE, together with the sense of relaxation and/or reconciliation with the unconscious self that is often present.

Negative aspects of RE include a strong tendency to arrogance and a lack of awareness of the needs of everyday life. A very strong experience of RE can be life-changing, and change not just the life of the one having the experience but the family, group of society in which the experiencer lives. or good or ill. Examples of this sort of thing include Jim Jones and the Jamestown massacre (negative effect) and St. Paul on the road to Damascus (arguably positive effect).

SOCIABILITY

We have already seen that *Homo sapiens* is the most sociable and peaceful of the primates. Living together in enormous numbers, instead of the 50-100 individuals that constituted the typical human group for the vast majority of our evolutionary history. Sociability and aggression, perhaps, constitute an opposing pairing of human behaviours. With sociability proving to be the more powerful for the billions of humans in the world.

But sociability, like aggression, has many different definitions and facets. Far too many to cover in our little test. So the test will only attempt to measure how important being with friends, or in a group at work is for you. Very like one of the many available tests for extraversion - introversion.

The evolutionary origins and advantages of human sociability are pretty obvious. Protection, for example, for this rather weak and defenseless ape, would be very important: safety in numbers. As Desmond Morris pointed out, we have no armour, big teeth or claws. We have less capacity to fight as individuals than a kitten. Then, large numbers and good communication would make the finding of food sources easier. Sharing of information and division of labour are also possible. And so on. This is a subject well covered in Social Psychology texts.

On the negative side, too much sociability, and over-large groups can lead to loss of identity and/or purpose and individuality, as described by Vance Packard in *The Hidden Persuaders* and millions of later publications. Hierarchies will become over-long as well. With a group of 50, hierarchies can only be about 3 persons long: and everyone will know everyone else. Everyone's contribution will be known. With a group of a million, familiarity between the high-ups and those at the bottom will be remote at best, or non-existent: so de-humanisation of those in different roles will occur.

GROWING PLANTS

The growing of plants is one of the most relaxing of pastimes for humans. Sometimes for food crops, sometimes for flowers, sometimes just for the sake of the process.

Humans have been growing plants for at least 10,000 to 12,000 years; various grains being the first crops. About 600-800 generations - plenty of time for genetic change. Given the increase in survival value of a regular food supply, this represents a likely clear evolutionary advantage for those skilled at plant growing, rather than hunter-gatherers. And so the growing of crops becomes an instinctive drive like any other. Present to some degree in most humans.

This drive, or need, has many, many expressions. From British allotments to the Kleinegartens of Germany, to the way in which farmers and farming communities seem to be wedded to their way of life - often not the easiest way of making a living. And, more recently, there are the innumerable TV series about gardening.

Seed Exchange on Vancouver Island

One of the small towns on Vancouver Island (noted as an ideal place for retirement) recently held a "Seed Exchange". You could hope, for example, to exchange your Dahlia seeds for a neighbour's lupin seeds, or your Lobelia seeds for decorative poppy seeds). It was an event for amateur gardeners, rather that farmers. Lovers of simply growing garden plants. Over 2,500 people attended! The biggest social event of the year! And a measure of the strength of the plant-growing drive in this human community.

Today, then, it seems that many more people grow plants for pleasure than go hunting or even fishing. The rewards include food, of course - perhaps the original motivation. But also the process of digging in seeds, feeding and watering and all the rest of it. And, it seems, the great pleasure of simply enjoying the beauty of the end product.

Mythologies abound with gods that are related to the growing of crops. If one reads *The Golden Bough*, or more recent compendia of mythology, it seems that every human society has had crop gods: usually female ones. Generally with rites involving death in autumn and a rebirth in spring. Demeter and Persephone are a Greek version of this.

From The Golden Bough (published in 1922), among innumerable descriptions of harvest customs comes...."Further, the corn mother plays an important part in harvest customs. She is believed to be present in the handful of corn which is left standing last on the field: and with the cutting of this last handful she is caught, or driven away, or killed. In the first of these cases, the last sheaf is carried joyfully home and honoured as a divine being. In some parts of Holstein the last sheaf is dressed in woman's clothes, and called the Corn mother. In France also, in the neighbourhood of Auxerre, the last sheaf goes by the name of the Mother of the Barley. They make a puppet out of it and adorn it with a crown. The branch of a tree is stuck in its breast and it is now called the Ceres" (continues). Just a hundred years ago!

SCIENCE

Or The Search for Knowledge.

Science has been described (in Wikipedia) as "A systematic enterprise that builds and organizes knowledge in the form of testable explanations and predictions about the universe." The knowledge sought is of a type that can be rationally explained and reliably applied.

This is very worthy but, to me, a little dry. I would prefer John Steinbeck's description in *The Log* From *The Sea Of Cortez*. Steinbeck and some biologist friends were collecting animal specimens on the intertidal zone of the Sea of Cortez (in Mexico, to the south of California). Their activity was watched by children from the local area who were fascinated to know what these American men were looking for. Treasure perhaps?

"What did you lose" they ask. "Nothing." "Then what do you search for."
And this is an embarrassing question. We search for something that will seem like truth to us; we search for understanding; we search for that principle which keys us deeply into the pattern of all life; we search for the relations of things, one to another.....These little boys and young men on the tide flat do not even know that they search for such things too. We say to them, "We are looking for curios, for certain small animals."

The scientific approach, so far as we can tell, has always been a characteristic of *Homo sapiens*. Sometimes very advanced within a society - as with Aristotle and the rest of the boys in the band in classical Greece. Sometimes persecuted, especially in religion-dominated societies, as with the alchemists and the early physicists in Medieval Europe.

This brings us to the contrast between the scientific approach and religion. Both *seem* to be seeking after truth. But, whereas science is based on the development of theories to explain the universe, theories that must be falsifiable (open to disproof) and always only partial or provisional explanations (like Darwinian evolutionary theory), religious beliefs are laid down (usually by God), are permanent and, in general, may not be challenged. Religious belief relies on suspension of disbelief (aka "faith"), where science relies on rationally devised theories that are never more than the current best explanations. Both scientific research and religious belief are passionately-held approaches to life but, as Richard Dawkins has said in *The God Delusion*, "It is all too easy to mistake passion that can change its mind for fundamentalism that never will."

Scientific Theories: Right and Wrong

Star Stones

In the 18th century there was a lively debate about fossils (Star Stones). Had they in fact fallen from the stars? It was finally decided, because of their resemblance to types of extant animal and plant species, that they were actually the remains of life forms that had once lived on earth. This a century before Darwin: no real explanatory theory, rather just the weight of observational data.

Correct theory.

The Hibernation of Swallows

At about the same time. Swallows catch insects on the wing. In summer the insects fly high. As the air cools in autumn the insects fly lower. The swallows follow so that just before they migrate to warmer climes, they fly just over the surface of the water in ponds and lakes. Then they vanish! It was therefore, very sensibly suggested, that they dive into the water and hibernate in the mud at the bottom of the lake or pond. This theory was only abandoned after much digging about in the mud of winter bodies of water. But abandoned it was.

Incorrect Theory falsified.

Passionate the early scientists were, though. If one reads the letter of, for example, the 17th century botanist, or Gilbert White the 18th century naturalist, or J.H. Fabre, the 19th century entomologist, or today's David Attenborough, one is immediately struck by the joy they get from their studies. The reward, for scientists, is in the process - the observation, the nearness to the natural world and, to a degree, the theory-making.

In relation to the other drives, science *enables* them to achieve their goals. It acts almost like an enzyme - speeding up reactions that take place only slowly on their own. Almost everything about our (mainstream Australian) culture rests on a scientific basis. From condoms to cities, from musical instruments to agriculture, from food preservation to nuclear weapons.

Science gets rather short shrift in mythology, though. It is perhaps best represented by the oracles, possessors of secret knowledge, and maybe by Athena, goddess of wisdom (and other things), after whom Athens was named.