Foresight in Everyday Life

AUSTRALIAN FORESIGHT INSTITUTE
MONOGRAPH SERIES 2003

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• carry out original research into the nature and uses of foresight

• focus on the implementation of foresight in organisations

• work toward the emergence of social foresight in Australia.

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ABOUT THE AUTHOR

Peter Hayward trained as an accountant and economist at Melbourne University. He worked in various technical and then managerial roles in the Tax Office culminating in a Strategic Intelligence role. He undertook further studies into complex adaptive systems and then completed the Graduate Certificate in Strategic Foresight at Swinburne University. He is now undertaking Doctoral research into whether individual foresight can be used to build social foresight.

Foresight in Everyday Life

Monograph Series 2003
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INTRODUCTION TO FORESIGHT IN EVERYDAY LIFE

It is fast becoming a cliché to say that say that the world is becoming 'more interconnected'. This is not a 'new' phenomenon, the pace and range of human development has been commented upon by the writers of all historical epochs. Yet there is a sense that the 'limits' of the biosphere are beginning to be encountered. Potable water, breathable air, arable soil, hospitable climates and inexpensive energy sources are becoming scarce. While Australia is a reasonably small player in the global economic arena it is also regarded as comparatively well endowed in most of these scarce resources. Many business leaders argue that we must climb on board the globalisation 'train' without delay. Our resources give us the means to pay the fare, however, the train will not wait for us. There is no alternative to wholeheartedly embracing this process.

A sense of doubt still lingers. Is the direction and destination of the globalisation 'train' the one that we wish to choose for ourselves and our future generations? Do we accept the pronounced 'default' future of the global markets and the transnational corporations? We certainly can allow these forces to decide our future for us, 'the future waits for no-one'. We can, however, choose to take responsibility for the Australia's future. While we cannot 'detach' Australia from the rest of the world and try to go it alone we can choose to have a national discourse about what we desire in the future. The series editor, Professor Richard Slaughter, believes that we can have this discourse if we have an applied foresight capacity that reaches across many organisations, field and areas of functional activity. To that end he is coordinating the Australian Foresight Institute's two-year project to outline a strategy for creating and sustaining social foresight in Australia. Supported by the Pratt Foundation, the two research papers that comprise this monograph are the first products of that project.

The first paper is a survey into the available research into the capability of foresight. It is predominantly focussed on an individual psychological perspective of what factors could contribute to foresight. It identifies the known research into the brain/mind processes that are relevant to the foresight capability. It identifies the likely cognitive and affective process that could be the antecedents of foresight in individuals. It gives the research project its basic starting point and it identifies some areas worthy of further research.

The second paper places the research within the social realm. How is the individual capacity for transformed by 'lived experience'? Specifically it addresses the following questions. Is there evidence of the use of foresight in everyday life? Is the use of foresight part of normal human functioning, and, has it provided evolutionary adaptiveness to humans? Does foresight correlate with specific personality types or traits, and, can this capacity be tutored?

It is hoped that the two papers contribute to our understanding of the human capacities involved in foresight and that they provide a foundation upon which further work can be undertaken.

1 | The uses of foresight in everyday life:

A survey of the available research into the capability of foresight

PETER HAYWARD AND PREETHI KRISHNAN

INTRODUCTION

In the preface of his book, *The Foresight Principle*, Richard Slaughter describes the present reality of planet earth as one of declining natural systems and a human species on the edge of survival. He goes on to say that 'however the human race chooses to deal with this difficult time the answer will, I feel, be bound to involve foresight'.[1] Webster's dictionary defines foresight as, first, 'an act or the power of foreseeing, prescience', second, 'an act of looking forward', and third, 'action in reference to the future, prudence'. Foresight is not a new thing, it is expressed in traditional sayings such as 'look before you leap', 'forewarned is forearmed' and 'a stitch in time saves nine'. As truisms those sayings show how employing foresight prevents unnecessary risks, creates self-protective readiness and conserve energies and resources.[2] Yet how much do we really know about the capability of foresight? Does foresight necessarily arise from a consciousness of time? Is all future sense foresight? If we wanted to 'cultivate' foresight, could we? This paper will survey what is broadly known about the brain/mind processes that contribute towards creating the conditions for a foresight capability and it will also highlight where further research is needed.

THE 'SCIENCE' OF TIME VS 'SOCIAL CONSTRUCTION' OF TIME

The survey begins with a consideration of the problem regarding a concept of time. There is a significant difference between how the physical and social sciences conceive of time. Kenneth Denbigh says that physics treats all 'parts' of time as if they were on a par with each other. It also does not consider that time has an intrinsic direction and thus it treats event sequences as being reversible. It offers no distinction between 'time forward' and 'time backward'. Further, physics makes a study of those constant and changeless items from which an understanding of nature emerges.[3] Thus the physical sciences see change over time as a temporary state of fundamental particles. Time is neutral without any qualitative element to it. It is really not a significant factor in much of the work of the physical sciences.

Time is however a very different conception for the social sciences. First, humans experience time through their emotions. The past can be perceived as regret, disappointment or pleasure. The future can be felt as volition. Thus time is constructed by an individual cognitive process and social processes rather than being a neutral element. Second, once a person perceives something then it cannot be 'unperceived'. Time does have an intrinsic direction forward and is not reversible. Last, unlike the entities studied by the physical sciences, living things have an innate power to initiate action, to create change, through the agency of time.[4] Therefore it can be said that living things interact in the construction of time.

It would therefore appear that there is a conflict between the 'fact' of time and the 'feeling' of time. If the Western worldview is dominated by a 'scientific' viewpoint then is time seen from this perspective? What are the impacts on people, who experience time through emotions, if they live in a society that only recognises the 'fact' of time? Denbigh quoted Karl Popper as suggesting that 'an explicit theory of time…to look upon oneself as possessing a past, a present and a future is fundamental to a sense of personal identity'.[5] As each individual is aware of his own history he also becomes aware of the history of others as well. This is perhaps a necessary condition for cultural evolution. person has obligations towards the histories of those that will succeed him and thus has an obligation to plan for the future. Does this mean that personal identity and cultural evolution could be affected by the viewpoint of time employed by a society? Does the capability of foresight arise from cultural evolution? Is a 'scientific' worldview antithetical to foresight?

No relevant research could be found which might shed light upon the previously mentioned questions. Perhaps those questions are philosophical matters and thus the answers will not be found in the sciences. As Slaughter observed, the qualities of foresight (foreseeing, prescience and prudence) are not qualities that late industrial cultures have been well known for.[6] It would seem likely that the cultural impact of the scientific worldview of time will play some part in the present lack of societal foresight. How and to what extent is not known at present.

What has been researched in some depth is the psychology of time perspective and its impact on human behaviour. At the outset it must be said that the psychology of foresight specifically, and how it might differ to other psychologies of time perspective, has not been researched. Specific research into the cognitive processes of foreseeing, prescience and prudence is needed. There is however a body of research from which hypotheses about the foresight capability can be conjectured. The survey will now focus on that research.

FUTURE TIME PERSPECTIVE – AN OVERVIEW

A very important element in a person's foresight capability will be their Future Time Perspective (FTP). L.K. Frank was one of the first psychologists to consider that there was a developmental process that occurred with regard to an individual's orientation towards future goals. With it, an individual had the ability to take anticipated outcomes or consequences of behaviour into account. 'The life-space of an individual, far from being limited to what he considers the present situation, includes the future, present and also the past. Actions, emotions and the morale of an individual at any instant depend upon his total time perspective'.[7] Later research found that an individual's future time orientation develops gradually to become a relatively stable personality characteristic in terms of a general capacity to anticipate and enlighten the future, including a cognitive elaboration of plans and projects and reflecting the degree of involvement and engagement in the future'.[8] In the research this is referred to Future Time Orientation (FTO).

Some researchers consider that difference between FTP and FTO is that FTO is considered to represent a person's preferred mode of thought and behaviour, whereas FTP refers to a person's cognitive understanding of expectations of the future. Much of the relevant research referred to in this survey is studying the cognitive understanding of FTP, although some researchers consider the two terms interchangeable. There is an obvious need for clarification of this point. If there were a difference between the two concepts then it would be useful to know how the two might interrelate.

FTP represents the present anticipation of future goals. Research has found that some people have a short FTP and they create most of their goals in the near future. Only the present and very near chronological future forms the temporal world in which they live. Whatever is after this is not considered. Other people have been found to have a long FTP. They have many more long-term than short-term goals. Their temporal world extends into the distant future and they have no problem being motivated by events or outcomes in the rather distant future.[9] One can conclude that possessing long FTP would have a strong correlation with having a foresight capability.

FTP has also been found to contain a cognitive and dynamic personality characteristic. The cognitive characteristic is seen as, not only understanding the immediate impacts of an action, but also the long-term implications of that same action. Surely this is an aspect of prescience or foreseeing. The dynamic characteristic is to ascribe a high value to even distant goals.[10] While research has shown that the prescribed value of an objective decreases as the time taken to reach it increases, this decrease is less for people with long FTP. Thus a long FTP means that a person places a high value on the future. Other research has demonstrated a link between valuing the future and adaptive behaviour. Specifically, valuing the future has been linked to decreased risk taking.[11] The cognitive aspect appears consistent with prescience and the dynamic aspect appears consistent with prudence, both of which support the apparent strong correlation between long FTP and the capability of foresight. A prima facie case appears to exist that a person with long FTP may also possess foresight. How much do we know about the development of FTP in individuals?

Generally the capability to experience time has been found to be a characteristic that develops with age.[12] Also treatment programs have affected FTP in drug addicts, which tends to suggest that life conditions are also a factor.[13] Socialisation processes also seem to affect FTP. It has been demonstrated that societal future goals are integrated into the individual goals of socialised individuals, as opposed to non-socialised individuals (delinquents), so that their social group's goals for the future become theirs as well.[14] Research has also found cross-cultural differences in the future orientations of students in Australia, Brazil, India and USA.[15] Based upon this research it is considered that FTP is a flexible construct that is capable of modification.[16] That researcher also concludes that there is an inherent self-reinforcement in future orientation. That is the more satisfaction it gives, the more it is stimulated and developed. By this process it is considered that it may develop into the stable characteristic that Gjesme referred to in his research into FTO. This is very encouraging because it would seem to indicate that FTP could be cognitively developed and then maintained over time. If FTP is a key element in foresight then perhaps a foresight capability can be developed and maintained in individuals.

Research has also been undertaken into the dimensions of FTP. While a number of possible dimensions have been identified, five appear to be likely:

- extension, the length of future time span that is conceptualised
- coherence, the degree of organisation of the events in the future time span that is conceptualised
- density, the number of goals, hopes, fears and wishes expected in one's future
- directionality, the extent to which one perceives oneself as moving forward from the present moment into the future

- affectivity, the extent to which a person is positively or negatively disposed towards anticipated events.

Extension and coherence are considered cognitive aspects of FTP; people can have an FTP that is more or less extended and coherent. Density, directionality and affectivity are the motivational aspects of FTP. The future can be experienced as more optimistic or pessimistic which in turn will affect motivation.[17] The problem is that research has not been undertaken into how these different dimensions may develop in individuals. There are also researchers who still theorise that, notwithstanding the dimensions that have been identified, FTP is still a unitary construct.[18]

The ambiguity in whether FTP is unitary or multidimensional, and in the dimensions themselves, has meant that a wide number of measurement instruments have been used in FTP research. In his study of FTP instruments, Gerald Seijts discovered a wide number of instruments that did not provide consistent results. Similar results were not obtained through retesting with the same instrument and the different tests have a low convergence factor.[19] The survey discovered a wide range of instruments that were employed by researchers to measure FTP. It was noted that in much of the research cited a unique instrument appeared to have been used by the researcher. The instruments developed by other researchers were not employed. Thus it is very difficult to correlate findings across the different pieces of research, let alone compare results. As yet there is no sense of the 'best' instrument to use or the reliability or suitability of the different instruments. The lack of a reliable instrument to measure FTP will hold back all further work in understanding how FTP develops in individuals and how it can be influenced or shaped. There is therefore a pressing need for such an instrument to be developed, tested and promulgated.

A minor concern about much of the research is that is focussed on either finding correlation to abnormal or maladjusted behaviour or finding correlation in adolescent (school children) behaviour. Whether the correlational direction of that research or the findings from those types of research audiences means that its findings can then be applied to normal adult behaviour with equal veracity is unclear. It would be good to see evidence of some of the findings from the 'best' of the behavioural research being re-tested with different groups.

Notwithstanding the concerns raised about the measurement instruments and methodologies employed there still remains fifty years of research into FTP which has produced a wealth of information about that cognitive and affective developmental capability. The findings of much of that research would appear to indicate that FTP has a strong correlative relationship to an individual's capability for foresight. There exists an opportunity to conduct further analysis of that research, to resolve the dimensions of FTP, to design and test a reliable measurement instrument and to undertake the research to correlate not only behaviours but also to identify the antecedents and consequences of FTP.

COUNTERFACTUAL THINKING AND THE EMOTIONS OF REGRET AND DISAPPOINTMENT

In section two, it was mentioned how the social sciences have tended to regard time as an emotional construct. One interesting area of research in this area is the work around counterfactual thought which is the process whereby current reality is changed into what might, could, would or should have been.[20] 'Counterfactual thinking mediates effect, and through its role in assessment of causation, counterfactual thinking helps to shape the specific emotions an individual experiences in reaction to a situation'.[21] In that study the researchers made a study of the emotions of shame and guilt. Both were negative emotions but they were found to differ in the assessment of causation. Shame was related to counterfactual thought where the self is mutated whereas guilt was related to counterfactual thought where behaviour was mutated. Shame is rationalised to be the fault of the person, guilt the fault of something the person did. It is thought that shame and guilt arise when a moral or social norm is breached. Behavioural psychologists have tended to shy away from the study of guilt and shame because of their presumed link to morality, hence they have not been considered 'useful' emotions for affected utilitarian purposes.

Regret and disappointment have been more widely researched in studies on individual decision-making. Lacking the same strong link to moral and social norms these two emotions have been considered to offer greater utility for behavioural research. Studies have found that regret and disappointment are felt as a consequence of or in anticipation of, decision-making processes. The difference between the two is in the antecedents of the source of the comparison from which the emotion arises. 'Although regret and disappointment both stem from a comparison between "what is" and "what might have been" regret is assumed to originate from comparisons between the factual outcome and an outcome that might have been had you chosen another action; disappointment is assumed to originate from a comparison between the factual outcome and an outcome that might have been had another state of the world occurred'.[22] In terms of counterfactual thinking regret causes a mutation in personal behaviour (within one's personal control) whereas disappointment causes a mutation in the situation (outside of one's control).

This is a significant difference, as an individual will feel causation from regret but little from disappointment. Anticipated regret would cause a modification of one's behaviour ('The exam might be tough so I'd better do extra study'); anticipated disappointment will cause situation modification ('The exam might be tough but I'll assume that examiner will choose the topics that I prefer'). Given the strong sense that a foresight capability would produce strong feelings of causality, then the anticipation of regret would seem to be the more useful of the emotions. Research has shown that when making decisions

people sometimes run a sort of mental simulation of what might happen before they actually make the decision.

> 'When decision-makers pre-compute behaviour focussed counterfactuals, the possible future regret will be made salient, and regret aversion will be promoted'.[23]

The conclusion that can be drawn from this research is that counterfactual thought processes generate specific emotions; behavioural counterfactual thoughts produce the emotions of regret or guilt and the anticipation of these emotions in the future can cause the modification of individual behaviour in the present. Thus the nature and form of an inquiry about the possible future consequences of an action would have a greater likelihood of successfully changing present actions if the inquiry was structured as a behavioural counterfactual. Further work is certainly needed in the elements that would go into structuring behavioural counterfactuals. Another point is that much of the current research appears to be based upon the study of regret and not guilt because of the presumption that the hedonic (doctrine of pleasure) value of decisions is a more useful area of research. This presumption may be correct if the decision-making process under examination is about consumer choice. For more societal decision-making issues however the social or moral value of decisions might be more appropriate. Therefore research that compared the effect of behavioural counterfactuals based upon moral norms to those based on hedonic values would also be very useful.

SELF-REGULATORY THOUGHT AND A DESIRED FUTURE

Another area of relevant research has been in the area of expectancy effects on behaviour. Social psychologists have demonstrated a link between positive expectations of the future and health, achievement and interpersonal relationships. Simply put, if a person expects to do well in something then they do perform well in reality. This well understood link between a person's positive mental attitude and the resulting beneficial outcome forms the basis of the very popular 'self-help' literature genre. Research has also found that the form of self-regulatory thought that is employed by a person acts to moderates this expectancy-behaviour link. This research into self-regulatory thought gives additional insight into how the capability of foresight might occur in a person.

Research has demonstrated that fantasising about a positive future only means that the desired future can be mentally enjoyed in the here and now. Without the contrasted reflections of present reality there is no necessity to act. Also dwelling on impending reality without preceding it with fantasies of a positive future remain mere ruminations and also lack a necessity to act. It is only when a desired future is mentally contrasted with impending reality that a behavioural commitment to act is established.[24] Thus three

forms of self-regulatory thought have been identified. A desired future can be mentally contrasted with impending reality, indulged by ignoring impending reality or suppressed by dwelling on impending reality. Only the first of these self-regulatory thoughts seems consistent with the capability of foresight. Further research has found that simply experiencing a discrepancy between the present and desired future does not create a felt need to act. Participants had to think about aspects of the future and aspects of the present and then mentally elaborate the discrepancy between the two before behavioural commitment was achieved.[25]

Thus it would seem to follow that foresight could have antecedent processes of imagining a desired future, determining impending reality and then mentally elaborating and contrasting the two in order to determine the necessity and commitment to act. These would not be the only antecedents of foresight but certainly important ones because the use of foresight could not be confused with merely indulging in idle speculation or merely dwelling on the present.

INTRINSIC VERSUS EXTRINSIC FUTURES

The last area of relevant research examines progress at personal goals. While mere progress towards goals has been widely regarded as beneficial, research has determined that the quality of the goals is more important than speed or quantity. According to this research well being is most enhanced when people make progress in goals that are congruent with their physical or emotional needs.[26]

One such need that was identified is autonomy, i.e. the sense of feeling self-determined and having choice in one's behaviour. People experience greater adjustment and satisfaction when they engage in behaviour for autonomous reasons, i.e. because of interest or conviction more than for controlled reasons, i.e. externally or internally applied pressure.[27] In addition to the person's reason for goals is the content of the goals themselves. Goals aiming towards self-acceptance and community involvement are termed intrinsic goals because they are associated with a move towards actualisation and integration.[28] Goals aiming for financial success and popularity have been termed extrinsic goals because they are focussed on rewards and other people's opinions. Research has shown that people orientated towards extrinsic goals evidence greater psychological maladjustment while people focussed towards intrinsic goals evidence greater well being.[29]

This research culminated in the findings of Sheldon and Kasser that people who strive for more autonomous reasons, or whose strivings are taking them towards possible intrinsic futures, scored higher on many different trait indices of health and adjustment.[30] These findings have led to the idea that personal growth is measured by the attainment of

autonomous/intrinsic future goals and by progressing, these people provide themselves with 'psychological nutrients'.[31] These 'nutrients' create the conditions for psychological growth. The relevance that this has for foresight capability is that it has been noted that foresight is commonly associated with well being, good sense and learning over time. Those aspects of foresight seem to ring true with the properties of autonomous purposes directed towards intrinsic futures. Thus it seems reasonable to conclude that foresight would be more likely directed towards the achievement of autonomous/intrinsic goals than it would be directed towards controlled extrinsic goals. However this supposition is not directly supported by any of the research that this survey identified.

THE NATURE OF THE STUDIES IN 'TIME' THEMSELVES

Finally a few words on the nature of the psychological studies of the aforementioned aspects of future time. Almost all the research that this survey has cited belongs to the school of cognitive psychology which would see concepts such as future time perspective, counterfactual thinking and self regulatory thought as part of the brain/mind's functional structure. From this schema we have cognitive elements, affective elements and behavioural elements wherein elements (such as future time perspectives) can be seen as part of an integrated whole. There are other schools of psychological thought that could also shed valuable insight into this issue but their research has not been uncovered by this survey.[32]

Neuropsychology would research the concept of foresight from a biological and brain structure perspective and would attempt to demonstrate how the capability exists within the human neural system. Foresight could be found to be a function of chemical biology and its imbalance could be treated by pharmacological means. None of the research identified explored any aspects of this field.

Psychotherapy would approach the question from an introspective and interpretive method based within each individual. Thus foresight may be a collective capability that is adapted according to an individual's experiences. Certainly some of the research identified by the survey would indicate that some pathological behaviour could be related to the absence of some of the characteristics of foresight.

A social psychological approach would regard foresight as being embedded in the cultural meaning of the individual's society. The research of Sundberg into FTP did indicate that there did appear to be an ethnic aspect at play.[33] However there are many other aspects of social culture that the research is silent upon (e.g. gender, political, ecological) and that could produce insights into the capability of foresight.

Developmental psychology would approach foresight as being part of a developmental process with different constructive process at each level. Some of the research identified

did indicate that time perspective did appear to be a developmental process in children but it is silent on that developmental process continuing in adults. Investigated from this perspective foresight might be found at higher stages of development and wellbeing.

Employing the Eastern and contemplative tradition might locate capabilities such as foresight as part of increased modes of awareness and that specific injunctions (e.g. meditation) could evoke or encourage this capability.

CONCLUSIONS FROM THE SURVEY

Four questions were posed at the beginning of this paper. How much do we really know about the capability of foresight? Does foresight necessarily arise from a consciousness of time? Is all future sense foresight? If we wanted to 'cultivate' foresight, could we?

Foresight has not been specifically studied in any of the research identified by this survey. Research into future time perspective, counterfactual thinking, self-regulatory thought and autonomous purpose and intrinsic goals however have given a basis upon which the other questions could be answered. It also gives an idea where further useful research could be undertaken. The research would tend to indicate that foresight is an individual cognitive characteristic that affects the behaviours of planning, goal setting and decision-making. There is also considered to be a link to general well being but this finding is based upon research that shows maladaptive behaviours appear to correlate to a shortcoming in the characteristic. It appears to develop with age but it has not been researched as a developmental psychological process in adults. Cross-cultural issues will also affect it.

The researched thought processes that seem closest to foresight are behavioural counterfactual thinking that produces feelings of regret or guilt about future consequences and self-regulatory thought. Then these fantasised futures and impending reality are mentally elaborated upon with the production of behavioural commitment. The content of foresight would seem likely to be about goals for autonomous purposes directed towards intrinsic futures.

Foresight does not necessarily arise from a consciousness of time. Long future time perspective would seem to be a core element in foresight and FTP seems to be a multidimensional construct. All future sense is not certainly foresight. Furthermore the future time sense that individuals 'feel' is not the future time sense that the 'hard' sciences measures as 'fact'. It would appear from this overview that the research has not been performed (within cognitive psychology) that would provide a systematic basis for the cultivation of foresight in individuals. The antecedents of future time perspective, counterfactual thought and self-regulatory thought are not known. If it is a developmental process in adults then it is feasible that antecedent conditions that are propitious to foresight could be created.

TOWARDS A RESEARCH AGENDA

The following questions have arisen from this survey. The addressing of these questions would go a long way towards creating a research agenda into the capability of foresight.

- Is there a difference between the concepts of future time perspective (FTP) and future time orientation (FTO)? If there is a difference then how do the two concepts interrelate? How should future research deal with these two concepts?

- Is FTP, or FTO, a unitary or multi-dimensionary construct? If it is multi-dimensionary, what are the dimensions? How do the dimensions develop in individuals? Are they interrelated?

- Can a reliable instrument to measure FTP, or FTO, be designed that is suitable for use with a wide range of audiences? Can the instrument be tested to correlate FTP, or FTO, to behaviours and antecedents?

- Can feelings of guilt be compared to feelings of regret to determine their impact upon behavioural counterfactual thoughts? Can behavioural counterfactuals be structured to encourage foresight?

- Is there a correlation between autonomous/intrinsic goals and FTP or FTO? Are future autonomous/intrinsic goals correlated with psychological development in individuals?

- Is the emotionally felt experience of time in individuals affected by an emphasis on a more 'scientific' viewpoint of time?

- Does FTP or FTO change as part of an overall psychological process in individuals or is a stable construct?

- Are any aspects of FTP or FTO affected by different social and cultural conditions?

- Do increased modes of awareness arising from specific injunctions, like meditation, affect FTP or FTO?

In addition to pursuing these questions a research agenda should also explore the adoption of an 'integral' framework to the study of capability of foresight. Ken Wilber proposed such a framework[34] which demonstrated how the distinct elements of psychology could be brought together in a holistic framework. Adopting a similar approach to the study of foresight capability would make a significant contribution towards establishing the conditions necessary for holistic foresight. Holistic foresight at the social level is ultimately what is required by the human race if it is to deal successfully with the problems it currently faces.

2 | Foresight in everyday life:

PETER HAYWARD

INTRODUCTION

Background to the Research

Creating and sustaining social foresight in Australia is a two-year project being funded by the Pratt Foundation. The project is seeking to develop the beginnings of an installed capability within Australia to apply foresight to defining proactive and viable future goals. In February 2002, a survey into the available research into the capability of foresight was published.[35] In April 2002, a survey of tertiary futures courses currently presented around the world was published.[36] This piece of research will be the third piece of work initiated for the overall project.

RESEARCH PROBLEM AND RESEARCH ISSUES

The research question for this piece of work is '**how do people actually use foresight in everyday life?**' That overall research question will be investigated by exploring the following three research issues:

- is there evidence of the use of foresight in everyday life?
- is the use of foresight part of normal human functioning, and, has it provided evolutionary adaptiveness to humans?

- does foresight correlate with specific personality types or traits, and, can this capacity be tutored?

IS THERE EVIDENCE OF FORESIGHT IN EVERYDAY LIFE?

What is meant by foresight?

Foresight is an attribute, or a competence, it is a process that attempts to broaden the boundaries of perception in four ways by:

- assessing the implications of present actions, decisions, etc (consequence assessment)
- detecting and avoiding problems before they occur (early warning and guidance)
- considering the present implications of possible future events (pro-active strategy formulation)
- envisioning aspects of desired futures (normative scenarios).[37]

This act of consciously looking forward permits a broader perception to be gained and from this broadened perception can come a range of possible foresight actions.

- to make preparation for a likely event (provisioning)
- to discern and then adopt the most suitable course of action (practical wisdom)
- to act with discrimination, profundity, compassionate understanding and anticipation (sagacious wisdom).

Thus foresight encompasses both a process to broaden perception and the actions that are informed from that perception. What evidence is there of these two aspects being part of everyday life?

Provisioning

Making provision for likely events in something that is constantly done. Some of the most obvious exponents of this are farmers. Farmers have the advantage that nature itself encourages provisioning by the actions of the seasons and they have used this to embody foresight in most farming activities. Field and crop rotation to maintain soil fertility, securing feed supplies for animals during unfavourable weather, reducing animal numbers in likely drought conditions, clearing undergrowth before the bushfire season, allowing a percentage of plants to go to seed rather than being harvested to ensure future seed supplies and maintaining fences and gates '*before the horse has bolted*'.

Someone planning a long trip overseas for the first time will make many provisions, not the least of which include, having a health check, seeing if vaccinations are needed, working

out the currency differences, acquiring some language skills, planning an itinerary, finding out about local customs, making preparation for a different climate and packing of clothing accordingly. Due to the reach of the Internet there is considerably more provisioning information that is available to everyone.

Insurance and saving are two obvious examples of provisioning that occur in most places. '*Save for a rainy day*' or '*take care of the cents and the dollars will take care of themselves*' both represent embodiments of foresight. The past few years have seen considerable attention being paid to encouraging individual's to accept responsibility for funding their own retirement. Perhaps this is an example of a provisioning activity that was poorly developed in previous generations. Certainly much is made of the 'baby boomer' generation in Australia who have comparatively lower levels of savings than their equivalents in other countries. If there was an expectation that the government would always be there to bail them out, an idea that 'someone else' was responsible for making provision, then the evidence from the public debate in this area is that both the public and the government were not making provision for this in the years gone past.

Another example of provisioning would be establishing water catchments to ensure the stability of water supplies. While rural residents understood that they had to dig their own dams and install their own water tanks to make such provision, urban residents expected that water provisioning was the responsibility of the government. This view is beginning to change as urban residents are now being encouraged to follow the example of the rural 'cousins' and to supplement the government's provisioning by installing their own water tanks.

The police, fire and ambulance services are other examples of provisioning. While no one 'plans' to use these services it is prudential to know that they will be needed. To hope that no one will ever have a house fire is to '*bury one's head in the sand*' and it would be also be foolish to try and provide fire services on a '*just in time*' basis. If one can smell the smoke then it is probably a bit late to start advertising for firemen. Thus the capability must be provided for in advance of its demand. A similar argument is mounted in defence of military spending as well. When the enemy is at the gates then it is too late to start thinking about recruiting and equipping an army. Likewise the supply of beds and nurses in hospitals and teachers in schools are further examples of services provided in advance of need.

Practical wisdom

Whereas provisioning is about making preparation for a likely event, practical wisdom, is about taking wise or practical actions now that reduce the likelihood of a more serious

event occurring in the future. '*A stitch in time saves nine*' is a very well known idiom that captures the essence of practical wisdom. There is a sense here of doing a fairly straightforward thing now rather than waiting for it to become a larger, more complex problem, down the track. A simple example here is the idea of the regular health check up rather than waiting until a potentially more serious illness is contracted. Cleaning your teeth after meals and going for a regular check up are generally regarded as better alternatives than waiting until you have holes in your teeth. Perhaps there is something in painful consequences encouraging practical wisdom. Maybe that fact as a child, everyone encounters dental problems as our teeth grow and this early, and painful, experience reinforces the practical wisdom of taking care of your teeth.

Another similar action is servicing a motorcar. Most people see the practical wisdom in servicing a car regularly rather than waiting for it to breakdown. Perhaps the cost and inconvenience factors have made sure that it is practical wisdom to maintain our cars. That many people take great pride in their car, that they believe that your car says a 'lot about you' would also encourage the practical wisdom of maintaining it.

'*Don't put all your eggs in one basket*' underpins most wise investment strategies. Unplanned events do occur and it is not much use being '*wise after the event*'. Once upon a time there was an idea of a 'job for life' for many working people. Nowadays employees are instead encouraged to have 'marketable skills' and display career 'flexibility'. Getting an education and undertaking on-going training are other examples of practical wisdom being practiced as the tenure of employment has reduced.

Most public health campaigns are examples of practical wisdom. Inoculations to avoid contagious disease, compulsory seat-belts and drink-driving restrictions to reduce the incident and impact of road accidents, the 'Life be in It' campaign to increase general public health in order to bring down public health costs and the ongoing restriction of smoking to improve public health and to reduce the legal liability of employers and retailers are further examples. Look for further campaigns extolling the practical wisdom of efficient water usage, extending working ages, and reduction of energy consumption as future problems require present preventative actions.

Practical wisdom is not always about doing the obvious. There is another popular idiom, '*being penny-wise and pound-foolish*'. This suggests that paying attention to the immediate and frequent, the pennies, could well cost you more in the longer-term, the pounds. We all have many things that call on our time, the urgent, and without thinking we can lose sight of the things that really matter, the important. Consider the balance between work and home. A parent might well think that trying to be successful at work will ensure that they earn the most money they can and that this money will provide the best future

for their children. Yet many studies have shown that the most important factor in raising children is spending as much 'quality' time with them in their formative years rather than the material items they are given.

Sagacious wisdom

Examples of sagacious wisdom in real life are hard to identify. It is easier to find examples of its lack. Look for the antonyms of wisdom, foolishness, folly or indiscretions, and you will find many examples of these cited in the media. Yet are what the media labels as the opposite of wisdom, really such? The essence of sagacious wisdom is that actions are informed not solely by what is known at the time, but also, what has been learned from the past and what is anticipated to occur in the future. '*Wisdom denotes the pursuing of the best ends by the best means*'.[38] The aboriginals of the Kakadu use slow burning fires to control the growth of undergrowth and through this mechanism bushfires are minimised and soil fertility is maximised. Was this sagacious wisdom? After reflection it is possible to conclude that such actions are wise. Perhaps then, sagacious wisdom is not something that can be determined when the action is taken. Much was written about the sagacious wisdom of Alfred Deakin and his promotion of irrigation to support agriculture. Those actions would have been considered an example of sagacious wisdom right up until the last twenty years. Now, with the knowledge of the salinity problems that have been exacerbated by irrigation, the actions do not appear so wise.

Does this mean that sagacious wisdom is impossible? If the dictionary is consulted to find not just the meaning of the word, but in what context an action is wise, then, the answer to that question is no.

> Wisdom: 'Illumination of the intellect together with charity inflaming the heart, constitute wisdom'

> 'Knowledge is proud that it has learned so much, wisdom is humble that he knows no more'.[39]

It would appear that a decision taken in the 'arrogance', rather than in the 'ignorance', of its possibility of being seen to be wrong cannot be sagacious wisdom. That would be foolishness. '*Wisdom excelleth folly as far as light excelleth darkness*'.[40] Sagacious wisdom would therefore seem to be as much in the stance that is adopted while a decision is made, in as much, as it is about the quality of that decision. A poorly made decision will never represent sagacious wisdom but a carefully discerned decision coupled with compassionate understanding could be. The compassion to ensure that the decision's outcomes are monitored to ensure that no unnecessary damage or harm is caused by it, for as long as the effect of that decision lasts, would seem to be approaching sagacious wisdom.

IS THE USE OF FORESIGHT PART OF NORMAL HUMAN FUNCTIONING, AND, HAS IT PROVIDED EVOLUTIONARY ADAPTIVENESS TO HUMANS?

Foresight which encompassing both a process to broaden perception and also the actions subsequently undertaken from that broadened perception would seem to be a capability which would grant considerable evolutionary advantages to a species which possessed it. A species which was unable, or unwilling, to practice foresight would seem to be at a considerable evolutionary disadvantage.

The Biology of Foresight

Foresight capability has likely been an evolutionary enhancement to Homo sapiens that gave an evolutionary advantage. Edelman suggests that when the mammalian brain evolved it became interlinked with the older reptilian brain from which specific evolutionary attributes developed. The combined reptilian and mammalian brain was able to create a 'scene' of its environment comprising categories of sensory input. These sensory categorisations were linked to emotional 'values', values that had been selected by evolution to enhance species survival, eg. recognition of danger, identification of food, species procreation. Efficacious linkages were reinforced and 'remembered', inefficacious linkages were weakened and 'forgotten'. It is important to note that the animal was not employing memory to make choices but was reacting to present sensory input and then storing an emotional 'memory' that aided in the quick selection of an immediate future response. Thus it is said that the animal operated in a 'perpetual' or 'creative' present. There is this present moment and then the next present moment and then the one after that. A series of present moments will no memory of the moment that has just passed. There is no foresight capability at this stage, but, with the further evolution of the brain a foresight capability did emerge.

Three properties emerged from the further evolution of the brain. Conceptual thought and memory, self-sense and linguistic capabilities emerged and the conscious capabilities of the brain exploded.[41] The earlier brain could assemble a scene of sensory categories and then 'react' to it according to its memory of previously efficacious actions. This later brain could now categorise 'concepts' that acted like actual sensory categories in its scene regardless of the fact that the concept did not physically exist. Further, the later brain developed a concept of the current scene and of the scene that preceded it. Thus time sense as a concept emerged, the perpetual present of the earlier brain could now also conceptualise past and future as well. This conceptual thought was coupled with memory of the conceptual and sensory scene, both present and past. With memory came the ability to learn and to plan, both significant evolutionary advantages.

Another concept was differentiated self-sense, the concept of subject and object. With self-sense came the concept of 'other'-sense, someone or something that is not self. Coupled

to this were linguistic capabilities that enhanced the creation and transmission of concepts and the performance of social learning. These concepts were still linked to those evolutionarily selected values that had aided the continued existence of the species. The difference now was that semantic values could be attached to these concepts, values that did not necessarily directly relate to the original evolutionary values. Now there is a foresight capability. There is a sense of past, present and future. There is the ability to remember and to plan. There is a sense of self as subject and there is language to convey meaning and enhance social learning.

Based upon Edelman's theory of how human consciousness evolved it is possible to hypothesise how foresight could occur in individuals. At its roots are those evolutionarily selected values or patterns of actions that have enabled species survival. Planning and learning would then have been behaviours that could have been linked to those same evolutionarily selected values and patterns. With the advent of self-sense and semantics, planning and learning were transformed from solely biological imperatives to behaviours that supported burgeoning self-sense and socialisation. As self-sense and society continued to evolve, the capability of foresight would have been transformed as well. It is certainly possible that the foresight capability in individuals could be so transformed by self-sense and socialisation that it's evolutionary heritage could be reduced to almost zero. On the other hand, it is also possible that the evolutionary heritage could be enhanced by those same processes.

Testing the theory – the foresight of parenting

The need to procreate, to continue the existence of the species, is a fact of evolutionary development. Freud described the drive to procreate and fear of death as our most basic evolutionary features. How then does the idea of parenting exemplify both a foresight activity and also demonstrate how, as a foresight activity, it has been transformed over time? Does the decision to start a family produce any new insights into the use of foresight?

In a 1973 study by Hoffman, the following positive values for having children were cited by parents. These are interpreted in brackets.

- Parenthood validates the person as a member of community (conform social role).
- Children are a way of being represented in the next generation. They continue the family name (defeating mortality).
- It is the moral thing to do. Sacrifice oneself, fulfil my obligations (conform social role, growth in self-sense).
- Child becomes an object of my love in a society that is increasingly loveless. Also keeps me from loneliness (loving and loved-self-sense).
- Child as stimulation and fun (growth in self-sense).

- Contribution to society and sense of achievement (contribution to society, growth in social self-sense).
- Parenting as an opportunity to guide/shape another human begin (growth in self-sense).
- Rise in social reputation and standing (growth in social self-sense).
- Rely on children for support in old age (pragmatic survival needs).
- The next step in the transition from single to married (growth in self-sense).
- Enhance affiliation with parents and other family members (growth of social role).
- Equated to becoming an adult (confirm social role).
- Integration into the community (growth of social role).[42]

Without going into a detailed statistical analysis, the findings would equate to a rough balance between parenting as a means of enabling growth in individual self-sense and parenting as confirming social role. Now the reasons that were cited for not having children in the same 1973 study are examined.

- Direct economic costs (financial impact)
- Foregone income earning role for wife (financial impact)
- Impact on leisure activities and free time (lifestyle impact)
- Loss of freedom (reduction of self-sense)
- Increased worry and anxiety (reduction of self-sense)
- Increase in workload (lifestyle impact).

This time the rough balance is between the financial/lifestyle impacts and the negative impacts on self-sense. From a foresight perspective these findings appear to support the biological theory. The biologically selected value of procreation was now transformed into a societal value. Parenting is seen as a community contribution, a step along the path to adulthood and a way to become integrated into the community. In addition to the social role parenting was seen as personal development opportunity, however, there was also a sense that parenting could also adversely impact on self-sense development.

Now let us examine the findings of similar research, undertaken in Australia in the 1990s. This time the cited reasons for the rewards of parenting were:

- Biological need, fulfil the urge to procreate survival of the species, babies are cute and trigger a biological response in parents (defeat mortality)
- Emotional reward, desire affection and companionship, fun and challenge, personal achievement (growth in self-sense)
- Symbol of love, expressing love for the partner or as symbol of love, child will promote closeness and cohesion in the relationship (growth in self-sense)

- Sense of continuity, extension of sphere of influence, live on through their children, carry on the family name, perpetuate the family line (defeat mortality)
- Improving on the experience, want to do things better, show that they will not make the same mistakes (growth in self-sense)
- Social pressure, expectations from society, friends, family (confirm social role)
- Overcoming problems, cementing a troubled relationship, overcoming loneliness or being unloved (growth in self-sense).

The costs of parenting were identified as:

- Ability to relate, responding to children, emotionally unattached (impact on self-sense)
- Responsibility, workload, emotional strain for child's health, safety and well being (lifestyle impact)
- Lifestyle, restriction on social activities or couple activities, interfere with individual achievements like education, financial, career (lifestyle impact)
- Effects on marriage, time, attention, energy (impact on self-sense).[43]

What is clear is that parenting as a social role has almost disappeared from the findings and now the main value cited for parenting is self-sense development. The same types of problems were identified as in the earlier study. We know that overall fertility in Australia has declined so it would appear that the foresight biology of parenting has continued to be transformed to the point where the biological value is being overwhelmed by the potential impacts on self-sense and lifestyle. The decline in the importance of playing a social role would appear to have some link to the decline of the value of a foresight activity like choosing to have children.

Another finding was how environmental conditions appeared to transform the value of parenting. In another 1970s study, the perception of the 'value' of having children was surveyed in the USA, South Korea and Turkey, those countries being chosen as representative examples of a first, second and third world country. The following table compares the reasons cited between the three countries.

Value of Children Project[44]

Advantage cited	USA	Sth Korea	Turkey
Economic utility	6%	36%	54%
Affection	66%	37%	34%
Fun and Stimulation	60%	47%	22%
Expansion of Self	35%	24%	10%
Social Identity	22%	6%	14%

It is clear that environmental conditions can also act to transform a biological foresight value. The importance that self-sense development plays appears to be a correlated to economic wellbeing which is hardly surprising, i.e. 'the better my physical needs are met then the more that I can reflect on my personal interior needs'. That study also found a broad correlation between urbanity and parenting values. Urban parents emphasise emotional and psychological benefits of parenting whereas rural parents emphasised the economic and practical including old-age security.[45]

The research into parenting decisions was examined to answer the following questions:

- Does the idea of parenting exemplify both a foresight activity and also demonstrate how, as a foresight activity, it has been transformed over time?
- Does the decision to start a family produce any new insights into the use of foresight?

In relation to the first question, it has been shown how a biologically valued activity has been transformed over time. The sequence of transformation would seem to be external factors, first followed by social role factors, and then individual self-sense. In relation to the second question, it may be that the use of foresight may move through a phase of being directed towards individual external purposes, then through a phase of social role purposes and then a phase directed towards individual internal needs. In addition, the biological value of the foresight action seemed to have become weaker as it became increasingly transformed by a greater self-sense or as the social role value declined. It would be interesting to research if the capability of foresight actions in other areas is similarly linked to social role.

The Social Cognition of Foresight

The idea of an individual's thinking and actions being shaped by environmental factors and inner psychology was researched by Albert Bandura, and it culminated in his development of social cognitive theory. Given the apparent link between an individual's foresight capability and its likely transformation by those same factors, then Bandura's theory is relevant here. Bandura's theory is based upon five capabilities that shape an individual's thinking. Each of these capabilities will be explored to determine their relevance to individual foresight capability.

Symbolising whereby an individual can create ideas that transcend their sensory experience. These symbols enable the testing of options before possibly costly action is taken and the communication of ideas across distance and time. This capability has the biological correlate of conceptual categorisation in Edelman's theory.

Forethought whereby behaviour is purposive and is regulated by future time perspective. An individual can anticipate the likely consequences of prospective actions and plan

accordingly. By converting foreseeable outcomes into symbolic meaning then these can act as current motivators and regulators of behaviour. In Edelman's theory this would equate to the evolutionarily valued pattern of 'learning' from a cognitive scene, a scene that can be sensorially based (present-focus) or conceptually based (past or future-focus).

- Vicarious learning whereby an individual does not have to experience something to learn, an individual can learn by observing others. Vicarious learning would correlate to another evolutionarily valued pattern of adapting to a dynamic environment coupled to social learning via language.

- Self-regulation whereby an individual can respond to self-produced internal influences in addition to external sensory stimulus. This would have a biological correlate to the development of self-sense and conceptual categorisation.

- Self-reflection whereby an individual can derive knowledge about themselves by reflecting on their own thinking.[46] One key self-thought that would shape foresight is the assessment of an individual's own capability to deal with different realities. This would correlate to the development of self-sense.

It would seem that Bandura's theory shares much in common with Edelman's theory of the biological emergence of consciousness. What then does Bandura's theory offer as insight into foresight?

One insight is that individuals will tend to model efficacious behaviour in others. The appearance of success in a model increases the influence of the behaviour of that model on others. Individuals who lack confidence in their own ability are especially prone to adopt the behaviour of successful models.[47] As success is a value that is socially mediated then 'foresightful' behaviours from successful models would encourage foresight behaviours in others. Of course the opposite would apply as well. A society that rewarded 'non-foresightful' behaviour would encourage the modelling of non-foresightful behaviours in others too.

Another insight is the paradox of extended future time perspective and short-term incentives for behaviour. Had humans been ruled by instant consequences then it is unlikely human society would have survived for as long as it has. Yet short-term actions can be modelled as attractive behaviour by politicians only interested in re-election, an incentive system for industry which only measures quarterly profits and with a media preference for current problems rather than future planning.[48] One way such modelling is prevented is to currently represent the harmful consequences for the future of present actions. Yet this is not always efficacious. First, when dire forecasts are based upon linear projections they have been found to be poor models because individuals do not remain idle in the face of foreboding. The trends are often arrested or slowed, the projected future is forestalled and the model efficacy of dire forecasts is reduced in the eyes of other individuals. Second,

there is a noticeable difference in how risks are measured by analysts and perceived by the public. A major determinant of perceived risk is the individual's judgement of their own ability to manage the dangerous aspects of a situation.

Most people do not suffer mishaps themselves, but they repeatedly observe media reports of others who do. Such biased comparisons lead people to overestimate their own efficacy and to underestimate their personal risk.[49]

Further, people have a remarkable capacity to adapt to gradually worsening life conditions while those who have a vested interest in continuing the existing practices can put impediments in the way of possible change.

Those findings by Bandura indicate a potential dilemma. Within the social cognition of foresight lie the seeds of a society that could model and reward foresightful behaviours, one that would give emphasis to an extended future time perspective. There is also the possibility of a society that would model and reward a foreshortened perspective by focussing only on the short-term consequences of actions and to ignore or discount any future consequences. Given the nature of people to adapt to change and to also underestimate endangerment then the second society, which sounds very much like our present society, is a likely but nevertheless unfavourable outcome. Perhaps an attribute of a society that finds its models of efficacious behaviour in the cultural imagery of material and commercial consumerism is that the cognition of foresight is 'deadened' to ensure that it does not uncover the shallowness of that same society. Still the cognition of foresight can only be deadened and not wholly eliminated as any dissonance between the external environment and internal psychology of individuals will always create an impetus to re-cognise social meaning.

Employment as a foresight practice

Employment is a concept that encompasses foresight aspects like self-sense, vocation and social role. An interesting theorist in this area is Donald Super and the life span, life-space approach to careers. His theory is essentially one of a developing self-sense in its life-space and how it progresses through a series of life-stages. This theory appears to have correlations to Edelman's theory on the biology of human consciousness and Bandura's social cognitive theory. Super's theory will now be examined to see if it could offer any further insights into the use of foresight.

Super's theory is that careers develop as individuals master the challenges offered by individual self-development and the evolution of their social role.[50] The five major stages of the theory are Growth, Exploration, Establishment, Maintenance and Disengagement plus transitions between those stages whereby the stages can be recycled.

In the life-stage of Growth, ages four to fourteen years, the individual gains a concern with the future and also begins to develop a sense of personal efficacy. Super theorised that children learn to acquire the adult concept of time and that near the end of the Growth stage they become more concerned with the long-term future. This would appear to be a key life-stage in the development of an individual's foresight capability. From Bandura's perspective the role played by social models would be critical. The finding that children learn to acquire the adult concept of time was also borne out by research into parenting attitudes. In research in Malaysia, one out of five thirteen-year-olds cited 'security in old age' as the most important reason for having children.[51]

In the life-stage of Exploration, ages fourteen to twenty-four, habits of industriousness, achievement and foresight coalesce and individuals begin to dream of possible selves that they may construct. The final vocational choices they make are impelled by their own self-concept and by the expectations of the individual, the family and the society. Super called this construct career maturity and while it did increase with biological age it was predominantly a psychological development in each individual. It is possible that the development of foresight capability may plateau at this stage as it will be shown that later stages do not seem to encourage its further growth. It may be highly developed in an individual at this stage or not really developed at all. This stage might be a useful area to undertake further research. There is a considerable body of work concentrated in this life-stage and while it will not have explicitly studied foresight, they could well be relevant findings that can be drawn.

In the life-stage of Establishment, about twenty-four to forty-four, an individual stabilises and normalises their occupational and cultural position. This is done by assimilating the organisational culture and developing positive relations. It may well be that outlooks are becoming conservative at this stage. As organisations are often focussed on stabilisation and preservation of the status quo then perhaps foresightful behaviour would not be acceptable if it generated questions about current thinking and actions. Of course, an organisation that embraced foresightful behaviours would not do this and would encourage the continued practice, and ongoing development of, foresight capabilities. This would also be a useful area for further research. Are organisational cultures actively pro or anti foresight behaviours and what would a pro-foresight culture comprise?

In the Maintenance life-stage, the individual faces the mid-life question of whether they want to hold onto this career or let it go. If they continue onto Maintenance then the tasks become those of holding on and keeping up. Individuals may barely cope with the tasks of Maintenance or they may find new challenges. From a foresight perspective senior decision-makers in organisations could well be in their Maintenance life-stage. In trying to keep-up and hold-on they could well be hostile to foresight actions that might be

seen to be shaking their sense of the here and now. Foresight could, however, be an opportunity for a senior decision-maker to find new challenges that could reinvigorate their career. This would seem to be another area where useful research could be undertaken. Could the practice of foresight by senior decision-makers provide impetus to the renewal of their career development?

In the Disengagement life-stage occurs deceleration, retirement planning and retirement living. After a long period of Maintenance, individuals experience a decline in energy and interest in their vocation and thus they begin to disengage from it. From a foresight perspective it would be interesting to know if this life-stage might reintroduce foresight thinking that may have been suppressed in earlier life-stages. Would a rising sense of personal mortality in an individual be conducive to foresightful actions?

Super's theory of life-stages does appear to offer some useful insights into foresight. The importance of the growth phase where the foresight capability could be largely established in children would seem to be a key insight. It could also be that the continuing developments in employment could impact on foresight. The reported increased casualisation of employment could make the Establishment life-stage even more perilous for the practice of foresight if individuals have a heightened concern for their tenure. Another possibility is that if foresight is awakened in the Disengagement life-stage then would the strong likelihood of older workers continuing employment beyond the traditional retirement dates in future years bring more foresight thinking into organisations?

DOES FORESIGHT CORRELATE WITH SPECIFIC PERSONALITY TYPES OR TRAITS, AND, CAN THIS CAPACITY BE TUTORED?

Personality refers to those unique and dynamic characteristics of a person that influence their behaviour and responses to their environment. The goals of personality psychology are description of the dimensions of personality, prediction of behaviours, the control of behaviours and understanding of the processes that underpin personality. There is no generally accepted theory of personality that could be considered the paradigmatic exemplar of the field.[52] Rather there are a range of theories that satisfy some of the goals of personality psychology to a greater or lesser extent, depending upon the individual's own implicit theory of personality.

An individual's implicit theory of personality reflects how they stand in relation to three recurring philosophical questions of personality.[53] Do we have free will or are our thoughts and actions determined by factors out of our control? Is a theory about explaining how we are all different or what we have in common? Should the focus of personality psychology be on the observable behaviour or the subjective thoughts and feelings? From the perspective of this study of foresight the answer to those three questions would be that we have free

will, that the capability of foresight is something we all have in common and the study of behaviour and thought are relevant.

The dispositional or trait theory of personality assumes that there is a range of enduring characteristics innate to each person and that these characteristics influence interactions with the environment. These are largely stable over time and produce a degree of consistency across time and circumstance.[54] For the purpose of this paper this theory is considered to be most relevant in exploring the final research issue – does foresight correlate with specific personality types or traits, and, can this capacity be tutored?

THE DIMENSIONS OF PERSONALITY

Six traits are generally agreed to underlie personality. These are extraversion, neuroticism, openness, agreeableness, conscientiousness and intelligence. Each of these will be examined to determine if they offer any possible correlate to the capability for foresight.

Extraversion

First described by Carl Jung, extraverts focus their psychic energy outwards, towards the world beyond themselves in contrast to introverts who focus their attention inwards towards the self and internal thoughts, feelings, emotions and fantasy. The following are reported differences between extraverts and introverts. Extraverts:

- report finding more meaning in life
- are happier
- are better able to interpret facial expressions and body language
- tend to appraise stressful events as challenges
- learn faster but less accurately on a maze
- respond better to efforts to elevate their mood
- are better able to handle time pressures
- are better drivers
- are less submissive than introverts
- are more tolerant towards marginal groups
- smoke more and find it harder to quit.[55]

While none of those findings relate directly to foresight the following can be hypothesised. The extravert focus towards the external world, their ability to learn from that world and to find pleasure and happiness in that world would indicate that foresight would employ that focus as part of its environmental detection process. The impulse to act with speed and to respond to challenges would also appear to support foresight actions. The

finding that extroverts do not learn as accurately as introverts or that extraverts might become addicted to external stimulants suggests that extraversion without some introvert tendencies towards inward reflection and imagination is not conducive to foresight. Overall it would seem that what extraversion would bring to foresight is outward engagement, scanning, energy, and optimism, however, the inward turn of introversion is also necessary to ensure that extraversion does not become action without thought.

Neuroticism

This trait measures emotional stability-instability with high neuroticism associated with greater instability. Hans Eysenck described the high end of neuroticism as characterised by anxiety, moodiness, restlessness, irritability and aggressiveness.[56] High scores in this trait combined with low scores in extraversion have been correlated to clinical disorders including anxiety, depression and lifetime drug dependence.[57] The ability to control emotions and impulses that appear to be correlated to this trait has been said to be measuring the relative strength of the ego.

The survey of research into foresight capability found that an individual's future time perspective appeared to be negatively correlated with similar clinical disorders,[58] which would seem to indicate that high neuroticism scores would inhibit the individual foresight capability.

Openness

Openness is a measure of how an individual responds to changes in their environment. Individuals with high scores in this trait tend to be more daring and imaginative in action and thought as well as displaying high degrees of tolerance for what others say, think and do. There is a strong correlation between high openness scores and individuals seeking educational opportunities and challenging work experiences. Openness is the trait most positively correlated to Intelligence and this has made it somewhat controversial as its critics equate it to a measure of cultural sophistication.[59]

Criticism notwithstanding there would seem to be a strong correlation between the Openness trait and the capability for foresight.

> Open individuals…prefer more open ended discussions, more diversity of opinion, and more complexity of thought…What they find intolerable is not dissent but the attempt to stifle dissent by appeal to authority or dogma.[60]

Openness is thought to be mainly a product of learning and socialisation rather than individual biology.

Agreeableness

This trait encompasses an individual's dealings with others. An agreeable individual tends to be sympathetic and trusting, however, in its extreme forms the behaviour can manifest itself as dependence. At the other extreme, antagonism, an individual tends to be mistrustful and sceptical. Like openness, this trait is thought to be the product of socialisation and learning.

There is no obvious correlation between agreeableness and the capability of foresight itself although one can imagine how an antagonistic person could act as a barrier to the general acceptance of a foresight perspective or to the commitment to a foresight action.

Conscientiousness

This trait bears much in common with an individual's achievement motivation. Conscientious individual's tend to persevere in the face of problems and are careful in how tasks are undertaken. The opposite trait is called 'undirected' which does not mean unduly influenced by impulses that cannot be controlled but means someone who is 'simply lazy'.[61] Like the two previous traits it is also thought to be largely a product of socialisation and learning.

The clear correlate between the trait of conscientiousness and foresight is around the care taken with tasks, akin to prudence, and the motivation towards self-reliance. One must have an interest in a long-term future to be motivated to bring one's energy and determination to bear on it.

Intelligence

Intelligence is a trait that has a pervasive effect on the other personality traits and has been referred to as a 'super-trait'. Yet the study of the trait of intelligence has been controversial as, above all other traits, it was seen as the one that easily allowed people to be 'ranked'.

> I hate the impudence of a claim that in fifty minutes you can judge and classify a human being's predestined fitness in life. I hate the pretentiousness of that claim. I hate the abuse of scientific method that it involves. I hate the sense of superiority which it creates, and the sense of inferiority which it imposes'.[62]

There is a correlation of the capability for foresight and the trait of intelligence, but, having said that it must be noted that such a correlation will not be straightforward.

The Intelligence Quotient test (IQ) is still around today but in the opinion of most intelligence researchers it is, at best, an average measure of intelligence and as such is

misleading. Instead of the notion of a general intelligence factor there is the idea of 'multiple' intelligences which all contribute to a set of skills of problem solving enabling the individual to resolve genuine problems or difficulties that he or she encounters and, when appropriate, to create an effective product – **and also must entail the potential for finding or creating problems** – thereby laying the groundwork for the acquisition of new knowledge[63] (emphasis in the original).

The capability for foresight can be specifically located in that quote, with the focus on solving genuine problems and creating problems that as yet do not exist but that are still worthy of present consideration. There would seem to be a strong correlation between these alternative conceptions of intelligence and foresight. One of these conceptions, Emotional Intelligence, will be explored in some detail in the next section.

Summary of the personality correlates

There do appear to be correlates between personality traits and foresight. The strongest correlates would seem to be in the traits of intelligence and openness with extraversion and conscientiousness being on the next level of significance. An individual's intelligence creates the foundational level of their problem solving capability. Foresight is predominantly a problem solving and problem finding capability so the two are strongly linked. Openness to experience is a measure of how adventurous and unconventional the individual can be in solving or finding problems. While not all foresight is unconventional there is a strong link between an individual's willingness to explore the boundaries of 'convention'. What might be found in such an exploration could be groundbreaking or it could be the rediscovery of the wisdom of our predecessors.

Extraversion and conscientiousness would appear to have weaker correlates to foresight. Extraversion provides the energy to individuals to tackle current and potential problems. Still extraversion must be balanced with a degree of introspection to allow conscientiousness to ensure that what is undertaken is done with care and thoroughness. Foresight is definitely not 'ready, shoot, aim'.

Given that there appears to be a correlate between aspects of personality and the capability for foresight then the second part of this research issue becomes more important. **Can the capacity for foresight be tutored?** It is here that the recent research into Emotional Intelligence is of particular relevance.

Emotional Intelligence and Foresight

When Howard Gardner theorised about domains of multiple intelligence two of these domains are shared by the research into what is now called, Emotional Intelligence (EI). These two domains are intrapersonal intelligence – encompassing self-awareness and self-management,
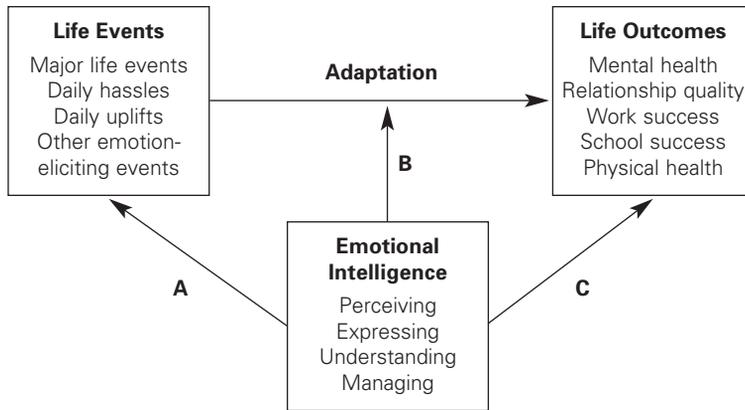
Figure 1: Emotional Intelligence in everyday life. The potential roles of emotional intelligence. Adapted from Ciarrochi.[64]

and interpersonal intelligence, which covers social awareness and relationship management. These two domains, 'my own emotions' and the 'emotions I share' with others are core to an understanding of EI. Figure 1 is a representation of EI in everyday life.

EI is defined as the ability to perceive, express, understand and manage emotions. Life Events can be negative and positive and range from major events to the everyday. Life outcomes are the ways that individuals adapt to these life events. Individuals low in EI will adapt poorly to negative life events (Link B) responding with negative life outcomes, whereas individuals high in EI will adapt better. Further individuals high in EI will arrange their lives so they experience fewer negative life events (Link A) and they may also be more skilled at managing high-quality life outcomes (Link C). That figure could easily be seen to be describing how foresight could operate in everyday life as well. An individual with high foresight would also adapt better to life events (Link B) because many would have been anticipated and provisions made or responses rehearsed. Foresight would also be employing practical wisdom to influence those life events to prevent unfavourable outcomes and promote favourable ones (Link A). Similarly, an individual high in foresight should be able to arrange higher-quality life outcomes through having a broader understanding of their environment and what goes on in it (Link C).

Affect and foresight

That our 'mood' (*affect*) does affect the way we think is self evident, although what is less clear is whether affect just 'colours' how we think or whether it changes thought in much more significant ways. EI studies have been examining this and many of their findings in this area are important to the study of foresight.

In one EI study affect was found to have a greater influence on judgements in direct correlation with the elaboration of the thinking used. It is theorised that affect has less influence when situations are more familiar and so less elaborate thinking is needed.[65] In those situations habitual thinking is activated and affective influence is minimised. Whereas when the situation is abnormal and the thinking is elaborated then affective influence is greatest. As foresight would tend to be often practiced in abnormal situations and as its approach would likely employ elaborated thinking then it follows that the potential for affective influence would be significant. Future research could specifically examine how affect does impact on foresight thinking.

Another finding was that an individual who is feeling good tends to pay less attention to external information and instead assimilates information in terms of pre-existing models of the world whereas an individual in a negative mood produces a more externally focussed thinking style.[66] This attribute seems to have evolutionarily adaptive advantages, where negative affect operates like an alarm to switch on a more precise and externally focussed thinking style in order to avoid danger.

Another study found that negative mood tended to decrease errors and distortion in performance assessment.[67] This is an interesting finding that is probably not suggesting that unhappy foresight practitioners are the 'best' ones but it does raise some useful areas for future research. Are their some affective stances, such as adopting a 'critical' stance rather than a non-critical stance, towards foresight activities that produces greater efficacy in drawing meaning from the environment?

Affect has also been found to influence how individuals think about the future. Most people overestimate the intensity and duration of their positive and negative reactions to future events. Called 'miswanting', individuals were found to want things that did not make them as happy as they would have hoped, e.g. lottery win, consumer purchases, and to have avoided things that did not turn out as bad as they originally feared, e.g. change of relationship or job.[68] This is another useful area for further research. What strategies can be employed to surface miswanting assumptions?

The outcomes from these studies offer clear evidence that affect does shape the practice of foresight. What this suggests is that high EI in individuals practicing foresight should ensure that the affect influence could be managed. It is certain that without explicit attention being given to the affective aspects of foresight, that the quality of the outcomes could be compromised. An integrative theory, the Affect Infusion Model, specifies that the thinking strategies employed should employ a blend of thinking effort and openness depending on the specific circumstances. For circumstances where the task is demanding, atypical, complex and there are no ready-made responses available then what is required

is affect infusion into the thinking process.[69] Such a model would seem to be conducive to foresight. Further research could examine how affect infusion could be integrated into foresight practices.

Emotional Intelligence and Self-Actualisation

In addition to the relationship between EI and foresight thinking is the possible link between EI and self-actualisation. Abraham Maslow, in his work on personal motivation, theorised that there was a level of individual 'development' that could be reached after basic survival, safety, social and personal needs have been met. He named it 'self-actualisation' and he said it was a process of becoming rather than an end-point to be reached; the process of developing your talents, capabilities and potential to the fullest. He studied people who he thought had obtained self-actualisation in their lifetimes. From that research he developed the following characterisations of self-actualised people who:

- are efficient in perceiving reality and are comfortable in relation to it
- accept themselves, others and nature
- are spontaneous
- are problem-centred rather than ego-centred (i.e. strongly focussed on problems outside of themselves and have some mission in life of some tasks to fulfil)
- need privacy and are able to detach themselves to achieve this
- are autonomous
- demonstrate continued freshness of appreciation (i.e. the capability to appreciate again and again, freshly and naively, the basic goods of life with awe, pleasure, wonder and ecstasy)
- have had peak or mystical experiences
- exhibit *gemeinschaftsgefuhl* (feelings for mankind)
- have deep and profound interpersonal relations
- have a democratic character structure (i.e. not authoritarian)
- can discriminate between good and evil and between means and ends
- possess a philosophical and unhostile sense of humour
- are original, creative or inventive
- resist enculturation.[70]

There is much in that list which resonates with the practice of foresight, especially practical and sagacious wisdom. Individual development towards self-actualisation would seem to be conducive to the to the development of foresight, especially the higher levels of

foresight. What is of interest then is the study of how EI influences self-actualisation. If such a causal relationship can be shown then a strong causal link between EI and foresight would also be established.

In three separate studies (North America, Israel and the Netherlands) EI, IQ and self-actualisation were assessed and correlated. The findings were that there is a strong correlation between EI and self-actualisation and a weaker correlation between IQ and self-actualisation. Further, certain EI factors were found to be more important in predicting progress towards self-actualisation. These factors were:

- happiness
- optimism
- self-regard
- independence
- problem-solving
- social-responsibility
- assertiveness
- emotional self-awareness.

Self-awareness was best predicted by a combination of self-motivation (happiness and optimism) operating on what an individual wanted to achieve in their life (self-regard) supported by their ability to rely on themselves (independence) and their ability to come up with solutions (problem solving). They also need to be committed to something worthwhile (social-responsibility) that they express (assertiveness) and which also depends on their knowledge of themselves (emotional self-awareness).[71] Those findings could also encompass the predictors of foresight as well. Further research could search for similar correlations.

SUMMARY FINDINGS

This research has shown that foresight is used in many everyday activities (refer Summary Table). Foresight developed as part the evolution of the human consciousness and it has supported those evolutionary values that have promoted the survival of our species. Once a solely biological capability, foresight is transformed through conceptual thinking, language and social learning. That process can either enhance or detract from the original evolutionary values that underpinned foresight.

Foresight, therefore, can be considered a 'natural' phenomenon, part of the normal functioning of human beings. Factors like social learning, enculturation and education, however, can act to enhance or deaden this native capacity. There also is evidence that certain personality traits and emotions can operate to enhance and encourage the use of foresight. There is even evidence that some of the 'higher' practices of foresight are accessible through certain personality factors. If more foresight is needed then there is some encouragement that it could be tutored.

This research has also highlighted questions that could be the subject of further research. Some of these are:

- What processes have the greatest impact upon the reconceptualisation of foresightful values? What strategies can be employed to counterbalance reconceptaulisations that are tending towards 'unwise' outcomes?
- How have factors such as modelling behaviours, rewards, risk perceptions and self-reflection operated to resolve the paradox of extended time perspectives versus short-term incentives in favour of more foresightful outcomes?
- If children acquire the adult concept of time then do they also acquire the adult concept of foresight?
- Does foresight in adults' plateau at particular life-stages and what factors contribute to this?
- Is individual foresight 'reinvigorated' in later life, and, if so what could be the impact of older-aged workers remaining in the organisations rather than retiring early?
- Could the practice of foresight by senior-decision makers provide impetus to the renewal of career development?
- What is the impact of differences in the relative strengths of personality traits such as extraversion/introversion, openness, conscientiousness and intelligence on the practice or development of foresight?
- Can affect be employed to specifically support the practice or development of foresight?

Foresight in Everyday Life

Foresight type	Everyday example
Provisioning	Saving money
	Insurance
	Superannuation
	Fire and ambulance services
	Military preparations
	Water storage
	Catching seeds for resowing
	Planning a family
	Planning for an overseas trip
Practical Wisdom	Dental checkups
	Car maintenance
	Career development
	Inoculations
	Seat belts
	Banning smoking in the workplace
	Life be in it
	Balancing work and home commitments
Sagacious Wisdom	Winter burnoffs in Kakadu
	Nile river flooding and farming

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