

Recognition of Serendipity and Zemblanity in Epistemology, Clinical Practice and Disaster-Trauma Research

A.J.W. Taylor

School of Psychology, Victoria University of Wellington New Zealand.

Corresponding Author: A.J.W. Taylor, School of Psychology, Victoria University of Wellington New Zealand.

E-Mail: tony.taylor@vuw.ac.nz

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Abstract

Vexed questions are raised concerning the barrier of logico-deductive experimentation in the acquisition of verifiable knowledge in relation to human behavior. As one way of loosening the grip, attention is drawn to the explanatory concepts of serendipity and its recently proposed antonym, zemblanity, each of which have been used to account for otherwise remarkable but inexplicable outcomes.

Definitions are given, their evolution described, and features considered that differentiate the two concepts, both from each other and from those that are marginally-related. Finally, to clinch the matter and induce other researchers to follow suit, examples of their occurrence are drawn from clinical practice and disaster research.

Keywords: serendipity; zemblanity; clinical practice; disasters; 'real-life' research

Introduction

Psychologists are trained to use the logic of scientific inquiry and verifiable methods for obtaining relevant data from which to draw conclusions (cf. Goodwin, 2002). However, once qualified academically, they tend to operate from either a theoretical or an empirical standpoint, depending on their personal preference and the dictates of their employing agencies.

Although neither approach is always adequate for the acquisition of knowledge, academics have a strong preference for the exclusive use of the laboratory-based hypothetical-deductive method, because it enables the manipulation of selected variables systematically in a before-after-and follow up sequence against controls, and allows others to adopt similar procedures in seeking the independent validation of their results. At best, they leave critical social topics in limbo, and at worst, they actively discourage applied psychologists from tackling them (cf. Taylor, 1966; 1970; 1998a: 2002; Von Bertalanffy, 1968; Miller, 1978).

Yet, as a posthumous publication of the social philosopher Roy Bhaskar (2011) pointed out, even the limited social research that is undertaken, often retains the mantra of prediction and control of issues that are unrelated to the actual 'world of being' in which people live. In his introduction to Bhaskar's text, Mervin Hartwig described 'a key index' of that world to be 'whether basic human needs are being coincidentally, and perhaps unwittingly, in his Presidential address to the British Psychological Society, Professor of Clinical Psychology Peter Kinderman (2018) seems to have endorsed the Bhaskarian epistemological theme. There he reminded his audience that: 'Psychology is a discipline and profession that spans the whole range of human experience. We, members of the British Psychological

Society, are experts in things that really matter to people: relationships, education and learning, health, mental health, politics, sport, crime, work, how organisations function, prejudice and intercultural understanding, and more. Our obligation is, therefore, to keep psychology always relevant to our fellow citizens and to the real world'.

While attempting to fulfil the prescription would be a daunting task, researchers might at least begin simply by bringing serendipity to the fore, and giving credence to its newly-proposed opposite, zemblanity. Clearly, both of these concepts are experiential rather than experimental, and they have proved helpful in explaining some of the elements in the appraisal of different real-life assignments.

The next section will cover the origins of the nominated concepts. It will be followed by first-hand empirical examples of their recognition that has commanded the attention of several national and international agencies. The discussion will bring several threads together, and raise implications for professionals in many disciplines.

The concept of serendipity

The 18th century English novelist Horace Walpole coined the term serendipity when reviving the 16th Venetian Michele Tramezzino's fairy tale entitled *The Three Princes of Serendib* (the former name of Ceylon, now Sri Lanka). Originally the story concerned three horsemen who, to quote Walpole, 'were always making discoveries, by accidents and sagacity, of things they were not in quest of': it centred on their deduction from observing a pattern of grazing that a camel ahead of them had only one eye.

Although Walpole's translation of the tale was probably more of a flamboyant gesture to impress the literati than a contribution to

nascent scientific method, with the advance of biology, chemistry and physics two centuries later, several leading scientists invoked the term to explain their significant but surprising laboratory results. Subsequently researchers in a wider range of academic disciplines followed suit. In fact by 1958, sociologists Robert Merton and Elinor Barber (1958/2004, ch.7) were able to trace 135 people with diverse interests and occupations whose publications showed their 'participation in some activity in which the making of unanticipated discoveries (was) a frequent occurrence'. Their list included lexicographers and bibliophiles, literary scholars, writers of fiction and non-fiction, applied researchers, industrial chemists, medical pioneers and social scientists. Had the investigators continued their search for just a few more years, they might have included Thomas Kuhn (1962) for his treatise on the series of paradigmatic shifts that opened new research. Merton and Barber wrote their treatise (albeit delaying its publication for nearly 50 years), because they valued the explanatory nature of the concept of serendipity, and were incensed by its commercial debasement. Hence, they set out primarily to restore the academic integrity of the concept. In doing so, they emphasized that: 'Serendipity is... no threat to the reputation of a scientist, rather the ability to take advantage of the unexpected is... a mark of maturity and distinction.' (op. cit., 1958/2004, p.177).

In the same seminal volume, Merton (*ibid.*, p.260) reiterated the definition of serendipity he gave 10 years earlier, i.e.: the 'unanticipated, anomalous, and strategic datum which becomes the occasion for developing a new or extending an existing theory'. Further, in introducing the later publication, Renaissance scholar James L. Shulman emphasised that it was 'the obligation of the applied sciences (sic) to discover useful terms, and (to) question ... how discoveries are made' (*ibid.* p. xv).

More recently, the Sri Lankan scholar Richard Boyle (2009) was another to inveigh against the 'hackneyed and incorrect usage' of the term serendipity. But he applauded the 'radically different' emphasis that John Paul Lederach had given the word on the vexed question of building peace, by saying:

'(Serendipity is) the wisdom of recognizing and then moving with the energetic flow of the unexpected. It has a crablike quality, an ability to accumulate understanding and create progress by moving sideways rather than in a linear fashion. Serendipity.... requires peripheral vision, not just forward-looking eyesight... (He went on to say that to) build from the unexpected, ... to connect accident with sagacity, ... keeps us alive to constant growth and unending potential'.

The concept of zemblanity

Merton and Barber paid little attention to the equal and opposite force to serendipity, except for mentioning two writers who had coined the antonyms 'unserendipity' and 'inserendipity' (op. cit., p.102). But Richard Boyle (op.cit.) endorsed the word 'zemblanity' for the obverse that the contemporary English novelist William Boyd had introduced not long before – i.e. 'the faculty of making unhappy, unlucky and expected discoveries by design (the word describing the second of) the twin poles of the axis about which we revolve'.

As for the derivation of the word zemblanity, Boyle suggested Boyd might have chosen it to evoke images of the frigid Arctic coast of Northern Russia, known as Nova Zembla, by way of a contrast with the lush tropical climate of today's Sri Lanka that the word serendipity might have brought to the mind of readers.

But apart from such climatological and poetic quibbles, it is difficult to imagine researchers in any discipline setting out with destructive intentions, unless it were to test the ultimate strength of materials, the best methods of disease prevention, or of disaster mitigation. But even with such worthy objectives, it is to be hoped that researchers would limit the amount of destruction necessary to provide the answers they were seeking (cf. Taylor, 2009, ch.28: 2010, pp. 45-55).

Instead, the suggestion here is that zemblanity is more likely to arise when researchers with 'malice aforethought' make false claims or fabricate data (cf. Fanell, 2009). It could even be enacted by those who might harbor jealousy or resentment against researchers and their projects (as some examples in the section below will suggest).

Although having said that, an instance comes to mind in which a technician in the Antarctic drove a truck deliberately into an extensive array of laboratory equipment, before setting about to repair it. At the time he was under extreme emotional pressure to prove he was in command of the apparatus, rather than vice versa (cf. Taylor, 2009, ch. 24).

The man had been isolated in a hut with a bank of equipment that sent noisy pulses skywards every 15 minutes, day and night, week-in week-out for 12 months. His task was to register the constantly changing lower level of the ionosphere, on which so much international communication in those pre-satellite days depended. After an unrelenting six months of such automated intrusion, he thought it imperative to demonstrate his dominance over the equipment, and he did so in the manner described. He expected to face repercussions for the loss of data caused by his actions, but thought the penalty worth paying for the preservation of his sanity.

The prospect of an experimenter causing harm, but ignoring it, featured in another Antarctic venture. It was a blatant example of zemblanity. The situation arose during the base-line stage of a major project in which, for logistical reasons, participants took turns as experimenters or subjects (cf. Rivolier, Goldsmith, Lugg, & Taylor, 1988). A few participants were heard to be planning to undermine a particularly dangerous, embarrassing and intrusive bio-chemical experiment that one of their number had initiated, and was not prepared to modify. It took a torrid group session to moderate the offensive protocol and restore sufficient cohesion for the study to continue (cf. Taylor & McCormick, 1987).

Two further examples of zemblanity arose on the same project. The first occurred during the planning stage, when a prominent New Zealand earth scientist from 'the old school', tried to undercut the country's financial contribution to the pioneering international project. When that failed, he tried to ensure that the country would provide unreliable transport as its Antarctic field component for the enterprise.

The second instance arose on completion of the same project, when a French senior researcher wanted to 'sanitize' the record of group-tensions, so as not to dismay his national sponsors. However, such examples of zemblanity are insignificant compared with those behind the grounding of the cruise-liner Costa Concordia off the coast of Giglio Island near Rome (cf. Giustiniano, Pina e Cunha & Clegg, 2015). From their scrutiny of official reports and court documents, the international team of occupational psychologists identified a complex interaction of cultural, humanitarian, managerial, occupational, seafaring and statutory breach of obligations, which they described as 'organizational zemblanity'. They concluded that among a myriad of causative factors, 'an excess of discretion and an excess of standardization co-occurred with an absence of any tendencies necessary to counter such excesses'.

Further differentiation of the concepts

When accepted as potentially significant explanatory constructs for such 'real-life' events as those described above, serendipity and zemblanity need to be differentiated from the placebo and its opposite, the nocebo. The former is a positive but limited attribute in psychotherapy that might be imparted to motivate troubled people

seek treatment: therapists themselves might use the procedure to encourage clients to overcome emotional blockage (cf. Taylor, 1968). Whereas the nocebo, reflects the despondency of those who expect never to change behavior, except through medication, surgery, hospitalization, or specific short courses of directive behavior therapy. Consistent with the current broader scope of applied psychology, the next section gives examples of serendipity and zemblanity that were derived from the present author's consultancies during and after disasters. For reasons that will become clear, the first example is more detailed than the others.

Further examples of serendipity and zemblanity in post-disaster trauma studies

Presented in chronological order, the first example arose during a study of occupational stress on the victim identification and augmented mortuary personnel after the Air New Zealand DC10 crash on Mt. Erebus on 28th November 1979 in which all 258 passengers and crew lost their lives (cf. Report of the Royal Commission, 1981: Taylor & Frazer, 1981; 1982: Paton & Long, 1996, pp. 57-65).

The second example emerged in the aftermath of the early November 1997 Cyclone Martin on Manihiki in the Cook Island group in the South Pacific that caused the loss of 19 lives (Taylor, 1998b); and the third arose during the work of a trauma service created for surviving pupils and relatives of the 18 adolescent girls and their matron who were burned alive in the Motufoua Secondary School dormitory-fire in Vaitapu, Tuvalu on 8th March 2000 (Taylor, 2000).

Example 1: Body-recovery and victim identification after the Air New Zealand DC10 plane crash

As the honorary consultant psychologist to New Zealand's Antarctic Division of the Department of Scientific & Industrial Research at the time of the tragedy, my immediate concern was to limit the potential effects of the air-crash on the personnel preparing to winter-over at NZ Scott Base, many of whom would have known some of the victims involved. Consequently, I registered my interest with the official telephone help-line that had been set-up. The next day Tom Clarkson, the Head of the designated Face-rescue Climbing Team, responded with a request for advice as to how long he should leave his crew on the mountain without a spell to minimize any stress and fatigue. The request, together with finding that the staff from nearby US McMurdo station had stood-in nobly to preclude most of the NZ Scott Base crew from the risk of being directly involved in the body-recovery of their compatriots, turned my thoughts to offering psychological support to the face-rescue climbers, the US personnel, and the 12-man New Zealand Police Disaster Victim Identification Team at work on the mountain recovering bodies.

The relevant authorities gave permission readily to access their personnel, as and when logistically convenient. The chief medical officer for the police followed suit, and consultant psychiatrist to the police Alan Frazer joined me in designing the clinical protocol and recruiting other clinicians to assist with its implementation.

Common-sense soon had us extend our concern even further to the helicopter crews servicing the crash-site, the body-bag re-packers on the nearby Williams Field ice-runway, the US Army Chaplains who assisted there, and the Royal N.Z. Air Force personnel who brought the human remains back to Auckland for coronial purposes and burial. Then to complete the coverage, we included the augmented administrative, coronial, medical, dental, embalming and police staff at work in the Auckland mortuary to which the bodies had been taken.

Overall, the subsequent response was remarkable, with 182 (80%) of the eligible personnel taking part in the project within three months, and 100 (55.6%) in the follow-up about 20 months later.

The attrition was not entirely unexpected, because the eligible participants belonged to highly mobile groups, with some either inaccessible, on leave, or working abroad at different stages of the project. Some wished neither to take no part from the outset, nor to continue at the follow-up, while a few had organizational hurdles put in their way.

Lessons were drawn, shared with the occupational groups concerned, and duly published in professional journals, including those of the Police. The positive, or serendipitous developments prompted the preparation of the first taxonomy of disasters, a differentiation of victim groups, and a flowchart for disaster-related clinical activity that subsequently many practitioners and agencies at home and abroad found useful.

However, the incidental comments of one climber proved most serendipitous. They concerned the protective defence that he adopted initially: it enabled him to distance himself emotionally from the unwelcome task of locating and bagging body-parts, until routine spells allowed him time to consider and recalibrate his underlying feelings. Similarly, on inquiry the police working in the mortuary were found to have held their emotions in check until later. They regarded the body-parts variously as familiar problems to be solved, pieces of a jigsaw to be assembled, broken dolls to be repaired, and such-like, until scheduled work-breaks induced them to contemplate the emotional realities of the job. Reflection for one policeman was the more poignant, because he would have been on the plane had he not changed his mind at the last moment when en route to buy a ticket: he reported a dream in which he had the role-reversal of his being a body on a gurney, with a real victim alive and working on him.

For some respondents, the work aroused dormant personal expectations and fears that could only be described as 'zemblanitous.' In one instance the grim task was exactly as a physician had long held in the back of her mind as the ultimate professional challenge she might have to face in her career. For a technician, sharing the experience at home with his father helped them both to unblock their emotional reactions - the son with regard to the carnage he had seen on the Mt Erebus crash-site, and the father from having been a prisoner of war in occupied Poland during World War 2 and made to clear the crematoria of a nearby concentration camp. For another, the work brought stories to the fore of concentration camp-life that her parents had undergone.

While the disclosure of such cognitive transpositions was significant in promoting the recovery of the speakers, it fortified the emotional defences of two others, and met the criteria for zemblanity. The pair were devout Christians who attributed the aircraft disaster to the departure of their fellow New Zealanders from the paths of righteousness (notwithstanding the fact that several of the victims were of other nationalities, faiths, and denominations).

At the time, such religious beliefs had to be accepted without question, because they had sustained their holders on a gruesome and prolonged assignment. One could only hope that gleams of rationality might afterwards prevail. Accepting their premise, even had there been any of their own fundamental Christian denomination on the doomed flight, the moral justification for the victims deserving the extreme penalty, would have required evidence of the extreme transgressions they were assumed to have committed: quite apart from questioning the morality of a system of beliefs that would penalize the whole group for the behavior of a few. Forgiveness, reformation and restoration did not feature in the ideology espoused at the time.

Overall, the variety of defensive reflections led to recommendations that in their training, personnel assigned to body-recovery and victim

identification duties, should be encouraged to identify their personal cognitive and emotional defences, use them when engaged on horrific work, and undergo de-briefing afterwards to help them regain equilibrium.

Here a word has to be said about failings in the size, structural layout, equipment and facilities of the particular mortuary to which the bodies were taken, because these factors compounded the emotional stress of many assigned to work there (cf. Taylor & Renner, 1983: Taylor 1984).

The mortuary was located at the base of a medical school building that was only three years old, and was intended to meet the requirements of the country's biggest city and largest airport. But its place, design, facilities and equipment proved quite inadequate for the task. It had insufficient refrigeration space for storing the frozen bodies until they could be examined: the examination room was on the second floor with access by one lift that serviced the whole building: the ventilation system was noxious: insufficient protective clothing was available for the augmented staff: there was no lifting gear available for moving bodies: and just a small windowless room designated for tea-breaks. The Professor of Pathology did not take kindly to the inadequacies of the mortuary to which many of the augmented staff had drawn my attention. He insisted that, because none had had complained personally to him of their working conditions as he had instructed, nobody had suffered stress! His manner gave rise to the 'zemblanitous' expectation that others in authority might behave in the same imperious way. Indeed, later that proved to be the case no less than three times.

The first of such instances occurred at a conference in Sydney, when in a presentation the late-chief medical officer for the NZ police claimed personally to have initiated, designed and implemented the entire psychological-stress study! Furthermore, he distributed a nine-page synopsis of the project from one of my publications that he described as his own. To add insult to injury, he knew I would be in the audience.

The other examples of zemblanity from the same disaster occurred recently, some 40 years after the event, when on separate national television clips two years apart, a few policemen and a representative of the NZ Pilot's Association claimed that nothing had been done to help them recover from the task in the Antarctic to which they had been assigned!

Example 2: The post-cyclonic inundation of a low-lying Pacific island with the loss of 19 lives.

In the aftermath of the November 1997 Cyclone Martin on Manihiki in the northern Cook Islands, an opportunity arose serendipitously to invite a survivor to retrace the course through which the raging torrent had carried her. It proved to be a cathartic experience for her that otherwise would have taken many conventional therapeutic sessions to evoke in the course of her recovery (cf. Taylor 1998c).

On the same remote island from which the cyclone swept 19 villagers away, zemblanity was apparent from the primitive beliefs on which all four of the approved religious denominations relied to justify the catastrophe (cf. Taylor, 2001). Like the two mortuary workers after the air-crash mentioned previously, different denominational preachers denounced the whole community for straying from the paths of righteousness – despite a highly-respected clergyman, his wife, and an infant being among those the cyclone swept away.

Regardless of the admonitions, the island had a recurrent yearly cyclone season. Furthermore, because of global warming, an international agency had even put scientific instruments in place to monitor sea-levels and water temperature – the purpose of which evidently had not percolated through to village level.

Example 3: The after-effects of a tragic school dormitory fire

Finally, involvement in a trauma service created for survivors and relatives of the victims burned-alive in the Motufoua Secondary School dormitory fire, gave an unexpected opportunity to reinforce a rudimentary local clinical team supporting the survivors and mourners.

The team comprised five indigenous multilingual medical professionals from different specialties who were somewhat familiar with the concept of psychological stress (cf. Boreham, Homasi, Marks, Rabukawaqa, Talia & Taylor, 2001).

A serendipitous benefit arose from the school-age survivors having first taken an active part in dowsing the fire, and then left to observe the recovery of burned bodies, before being evacuated as a group to the care of their extended families on the main island in the Tuvalu chain.

Had the tragedy occurred in the Western world, their counterparts would more likely have been shielded from the sights, dispersed widely to the homes of their immediate biological parents, left bewildered in isolation from their school-friends, and unwittingly denied an early chance of putting their fragmented memories into manageable perspective (cf. Yule & Williams, 1990).

On the same assignment, yet another serendipitous event occurred when a solo-yachtsman seen entering the harbor was found to have held a senior position in the New Zealand Fire Service. The man agreed readily to offer his expertise to the island authorities in the subsequent investigation into the causes of the fire, and the adequacy of preventive measures.

Zemblanity arose with the 'disappearance' of the only specimen set of questionnaires that were taken for copies to be printed-out: it meant that diagnoses had to rely on the combined judgment of clinicians and the observations of community members. But the 'loss' was compensated by the completely unexpected opportunity to become acquainted first-hand with the mixture of pagan and Christian beliefs that sustained members of the community. It also presented an opportunity to observe the specific religious ritual that the non-conformist church used after such occasions for cleansing perceived community guilt.

As a consequence, it made sense for me to recommend that a memorial be constructed to allow pupils to continue their dialogue with the spirits of the deceased during the school year, with relatives joining them on annual memorial days – otherwise the secondary school, the only one in the chain of remote small islands, would have been in danger of being declared permanently tapu, with all the attendant cultural, economic, and social repercussions that would have followed.

Discussion

Collectively the examples touched on the importance of:

- a) negotiating formal access to people under psychological stress

- b) making satisfactory arrangements for transport to and from disasters area, with sufficient but minimal demands for security, communication, health requirements, basic accommodation and supplies
- c) considering the appropriate cross-cultural modus operandi for the different field settings
- d) recruiting others capable and willing to work as associates on such assignments
- e) establishing a common plan of approach, including readiness for the helpful unexpected – serendipity, and the expectation of interference - zemblanity
- f) setting reasonable limits for a daily work schedule
- g) discerning the major prevailing belief-value systems in a designated community
- h) ensuring the cross-cultural validation of clinical concepts and psychometric measures intended for use
- i) attending carefully to anecdotal reflections generated by people involved in the aftermath
- j) being pleasantly surprised by unexpected opportunities, while leaving time to cope with expected set-backs
- k) making adequate plans to follow-up the people seen, and others seeking help belatedly
- l) preparing reports and clinical publications as appropriate, to which the authorities, associates and local community representatives have access, and finally
- m) Undertaking and undergoing routine debriefing.

Above all, the outcome can be claimed to have demonstrated that ad hoc research models, with applied, clinical, and cross-cultural components, have relevance for ‘real-life’ psychology (cf. Taylor, 1998a). Evidence of their utility might appeal both to the previously mentioned Bhaskarian theoreticians who would endorse research focused on key community concerns, and to Peter Kinderman’s appeal for more psychologists to commit themselves to such professional pursuits.

Conclusion

Collectively the foregoing suggests that clinicians and researchers on similar recovery assignments were wise to be alert for opportunities that could be beneficial if unexpected, and to remain alert for incidents to the contrary that could otherwise become more troublesome, distracting, time-consuming and disconcerting.

Were other researchers to recall similar experiences from their professional practice as those sketched here, and document them for the record, their disciplines would be enriched by the exposure of extraneous, if incidental, components of ‘the truth, the whole truth, and nothing but the truth’.

The accumulation would also be grist to the mill of philosophers of science who are concerned to foster a methodology appropriate for studies of real-life events: it should also induce the next generation of cross-cultural and inter-disciplinary researchers to do better than their forebears in that regard.

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