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Bush Mechanic Action Research Project [BMARP] - Coding outcomes from applying Grounded Theory to identify key attributes of a Bush Mechanic/Artificer Learner as an exemplar of Anticipatory Action Learning/Futuring/Artifice Learning, with a view to establishing the basic principles for further development into a Local Theory there of [Table 6]

BMARP 2: Link 2 in the Bush Mechanic Action Research Program

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Chapter 1 Grounded Theory Coding

In this chapter I include many of the tables (with their table numbers relating to the actual coding exercise rather than this report) from the coding process of the Grounded Theory component of this research project. Various conclusions and observations are then made.

Learning Insights Table's 2a, 2b -50 Actual Lessons Learnt (@ 01-03 to 15-01-2005 comm. 12-2002)

Table 2a: A comparison of Artificer | Phronesist | Cognitivist approaches to learning

Artificer	Phronesist	Cognitive
<p>Main aim is to be an individual who is able to Act with:</p> <ul style="list-style-type: none"> . Efficaciousness . Telos . Capability . Design . Reflexivity . Intent & agency . Integrity . Community membership . Reward is what we can do right today for tomorrow 	<p>Main aim is to develop individual reason in order to be able to embody moral virtue with:</p> <ul style="list-style-type: none"> . Citizenship . Truth . Telos . Capability . Eudemonia . Polis . Reward is what we can do right tomorrow 	<p>Main aim is to develop people with knowledge to be able to:</p> <ul style="list-style-type: none"> . Think in facts, figures & words (facts not acts) . Be qualified via. book learning . Relate to other intellects . Be socialised workers . Develop ones intellect . Reward is to be pinched for what we did wrong yesterday
<p>Learning focus: from mentored acts inc. play, experience, role modelling, simulations, citizen action groups</p> <p>Intellectual Focus: Act wisely i.e. walk your talk</p> <p>Action Focus: Do to try</p>	<p>Learning focus: from engaged deliberation in public meetings, demos</p> <p>Intellectual Focus: Wise action i.e. talk your walk</p> <p>Action Focus: Try to do</p>	<p>Learning focus: from words from individual study</p> <p>Intellectual Focus: Know heaps i.e. talk your thought</p> <p>Action focus: Think to try</p>
<p>Observations:</p> <ul style="list-style-type: none"> . Not as globally conscious or Eudaimoniaic as Phronesis . Today very difficult to be a deliberative citizen – means identifying yourself as a target . Σ <i>I act therefore I am</i> [<i>I fact therefore I am</i>] 	<p>Observations:</p> <ul style="list-style-type: none"> . Agency & efficaciousness implied to a degree . Σ – I understand how to act virtuously with other citizens – <i>I actively deliberate therefore we are</i> . Emphasis is for Aristotle P as an intellectual virtue 	<p>Observations:</p> <ul style="list-style-type: none"> . Σ <i>I think there fore I am</i> . Emphasis on social integration & bureaucratic management to support consumerist orientation . This implies an implicit design level separation of thinking and doing . For Plato Thinking and Acting were separate acts for very separate classes of people philosopher king & all that
<p>Operationally this means: <i>Collectively:</i> communities of artificer learning circles operating in the public sphere <i>Individually</i> artifice mentoring</p>	<p>Operationally this meant:</p> <ul style="list-style-type: none"> . Collectively thinkers deliberated in the Polis [which loosely comprised several demos (city states)] on issues of eudiamonia and which then was endorsed by the Senate (on which the male citizens took turns) and was implemented by the citizenry . <i>Individually</i> citizens practiced moral virtue 	<p>Operationally this means today:</p> <ul style="list-style-type: none"> . <i>Collectively</i> thinkers – Academics/policy makers and doers – bureaucrats . <i>Individually</i> we become ‘Students’ with little power slotted into predetermined cognitive pursuits & studies

Source: P Wildman 04-04

Table 2b: Learning Insights towards generating an Artificer Algorithm – 50* Characteristics of an Artificer

Muriel Stanger, Don Miller, Richard Mochelle, Robert Pope - 04-02 to 01-05 [[A] Task; [B] Tasker - The Don; [C] Approach to T; [D] Task Context; [E] Learning from the Task; [F] The X Factor]

No.	Characteristic	Explication	Date	Artificers
A	[A] Actual Operation/Task			
T1	Face your fate	Hard, Tough and uncompromising on, self & task, yet flexible approach to both	04-04	DM,
T2	Holographic	Simultaneously holding big & small pictures	04-04	DM,
T3	Autorun	Self referential – inner->outer power plant, values, anarchist	12-02	DM,
T4	Wait & Innovate	Consider the options & take the challenging innovative one (build up to a quality not down to a cost) **	04-02	DM,
T5	Mirror Mirror	Reflexive praxis – phronesis – personal and global Eudemonia - better world focus	12-03	DM,
T6	Fractals/Patternisation	Crucial - Tradesmen want drawings rather than patterns – high levels of uncertainty	04-04	DM,
T7	Pass the buck	Payment levels suit task/aim/customer not hours	04-04	DM,
T8	Designer interface	1/3rd of time is on design – measuring I D I = 1/3 1/3 1/3 all time on ‘D’esign	04-04	DM,
T9	Deal with fact	The aim is to validated proposition, ideas, concepts & design through a cycle between these & fact & measurement as one approaches ‘weld’ time	04-04	DM,
T10	Duration	Artificers simply take the time required & don’t count it at the hourly rate of the market. Time passes differently/slowly/organically/bumpily. Time is not spent it is invested in shaping the outcome	05-04	RM, DM
T11	Braiding	Thus a task becomes a project becomes a journey where self building, block building & mind building all braid with I D I	05-04	DM,
T12	Construction	A mirror of the macro (overall fitment for use of trailer & boat & motors) and micro (removing dags) processes	05-04	RM, DM
T13	Focus on enactment	Focus on Enactment wherein Integration of Communicative & Instrumental & Operational actions occur. [CA does not necessarily go towards the Artisan]	05-04	RM, DM
T14	Function as interface	Task as segments and interface where the task integrates concept, design & production & is vital for eudemonia	05-04	RM, DM
T15	Timeline	A major project becomes just like a job where you simply work week in week out e.g. for over a year without gloating over the big finished pose picture – ones ego gets sorted quickly, in concerns about detail, rework, costs, unexpected events (blistering on top of motors). Its like a long train trip where sometimes one forgets the destination as each station has to be fixed up	12-04	PW
T16	Standards	Standards are arguably seen as political, incompetently developed & are formulated & established to protect the powerful players	01-05	PW, DM
B	[B] The ‘Don’ - the Person			
P1	Lateral split	Simultaneous interest in several apparently unrelated yet interfacing areas	02-03	DM,
P2	Through the	Focused centred attention when artificer arena is	04-03	DM,

	looking glass	entered		
P3	Integrity	Through the looking glass two way integrity	05-03	DM,
P4	Multi-expertised	Need to be multiskilled & multiexpertised	04-04	DM,
P5	Agency	Active belief in artificer agency & that 'prosumerism' is valid & important		
P6	Interface intelligence	Ability to see how various quite unrelated subsystems can interact efficaciously, active experimentation & prototypisation till they do	05-04	DM
P7	Bush Mechanic	City folk have a pejorative view of bushies as folk who don't understand much are pretty dumb and try to make everything work with fencing wire. Well TV programs like Bush Mechanics, Iron Chefs, and Junkyard wars and our artisan/artificer experiences all demonstrate that this is couldn't be further from the truth. Such Bushies have an acute understanding of the Idea Design Implementation process and could build a rocket if given half a chance (and the availability of parts to do so), however city folk usually only see their artifice genius manifest with fixing things with fence wire.	04-04	DM, PW
P8	Do the hard yards - Walk their walk so you can talk your talk	Artifing is more than Empathy 'What would he know – he has never experienced anything like xyz?' Empathy has many angles and is what I call a splodge word i.e. it can be made to mean what you want it too. Nevertheless empathy as expressed in the first sentence does play a key role in artificing. Generally speaking the artificer has 'been there done that' and learnt a bunch and looks forward to applying these lessons in a collegiate/empathetic (not market) relationship in future. So it is not a fuzzy unconditional empathy it is a forward looking conditional 'collaborator' type empathy. Artifing is about Active Compassion Building on empathy, ArtL shows empathy with the individual and compassion for the overall situation with a commitment to do something about it. For example Don Miller a boat tech artificer's compassion with other boat users, most of whom, he doesn't know, in that they could well be put of boating due to the rapaciousness and incompetence of boat dealers when they take their boat in for work.	05-04	PW, DM
C	[C] Approach to Task			
A1	Braiding	Fact, Value, Theory Enactment - braiding of similar import	04-04	DM,
A2	Precision	Artisan Pro & retro – high standards	05-04	DM
A3	Innovating	Predilection for doing to try something new i.e. an improvement on what (he) has (been) done before	04-04	DM,
A4	Time	Protirement in control of workstyle, timestyle & lifestyle	04-04	DM,
A5	Under their Radar	(1) Financial control - Under GST, Tax, ABN etc radar (2) In the informal sector – If your asked I'm just doing a favour for a mate (3) somewhat subversive	04-04	DM,
A6	Track Record	Profound in the arena of AL inc. operating 3 factories & making/fixing/setting up heaps of boats/trailers/motors etc	04-04	DM,
A7	Stealth wealth	Artificer arena fits into & is supported by large life & work style choices eg. wealth, success etc. Aim to stay under their radar	04-03	DM,
A8	720 degree project	Take responsibility for efficacious completion of the overall task inc. clean up	03-03	DM,
A9	Agency	Belief in his own agency*** to carry the day	04-03	DM,
A10	Listen to the customer	Don't rub them out but build them in	05-04	DM,
A11	Eudaimonia	Phronesis in practice, Episteme in concept	02-03	DM,
	[D] Task Context			
C1	I begin to realise the profundity of an Australia emerged as a consumerist dependent country 15	During the last half of the 80's Australia changed from a self sufficient country to a consumerist dependent one, because: <ul style="list-style-type: none"> . Globalisation - financial (IMF/World Bank), economic rationalism, third world low cost production . Unions/accord – this was still the day of demarcation disputes i.e. multi-skilling (a prereq. of artificering) was verboten . Consumer expectations (no longer trusting of smaller artificer type operations) – this was the result of a dedicated deliberate program by big business & Government – 	05-04	DM, RP

	years ago when globalisation began to bite	Don personally knew at least three youngish (40 something) small business operators/colleagues who blew their brains out at this time. . This is when NAGLEI came out and CBT was coming it These meant the end of small scale specialist design/engineering fabrication businesses in Aust		
C2	Doomer Consumer Bloomer	As Australia moves post late 1980's (NAGLEI - 1987) to hyper-consumerism – self-reliance (individual & collective) goes out the window. Suppliers are suppliers only of imported goods + don't understand the technical nature of what they are supplying. Australia does not manufacture so cant custom make only assemble. Custom manufacturing (& other forms of innovation) becomes a constant struggle to get parts. Artificers & Artisans are custom fabricators of prototypes. Consumerism pushes us to the consume & only to be concerned about the superficial (store shelf) products not how or where they are produced or to even consider producing them ourselves let alone seeking to improve them. Legal considerations, expressed through bureaucratic administration, also lock concepts up in category boxes in little things such as trailer hitches & and so prevent innovation in the field/periphery. Innovation in the centre, when it does happen, suits the macro manufacturer eg. 5 year warranties on vehicles make you use them for servicing etc. Service becomes reconceptualised as service as supplying what we have on the shelf & has nothing to do with actually helping you get your job done. The overall impact of this is what I call the long hollowing of Australia in that we become warehouses who don't understand what we warehouse or how to use it let alone make anything new with it. Further consumers who wish to be prosumers are regularly rubbed out eg. I was rubbed out 5 times in 2 hours am 06-05-04. DIY turns out to be DIY with what we have on the shelf & that's it I have realised that academics who only deal in arranging words on standard Govt issue computers, never things- never experience this they are at the cognitive or idea end of the spectrum & hyper busy writing articles & courses. It gets worse as our Western episteme means is that thinkers and doers are separated with innovators & custom manufacturers being seen as doers. Academics, CEO's, politicians, senior bureaucrats are seen as thinkers and not doers & thus the long hollowing never gets to be recognised as important & even if it was, politicians who manage the spoken word couldn't recognise it as important so innovation formation is blocked and innovation transmission is stymied and innovation osmosis prevented. All this speaks of dire consequences for any attempt at social innovation.	05-04	PW
C3	The buck bites back	Cost structure now precludes such artificing - \$70phr for electricians, boat techs etc. This means many products are now just thrown out not repaired	05-04	DM
C4	The disappearing doodads	For artificers to survive let alone thrive hardware stores & chandleries have to stock heaps of do dads – increasingly it is just the main lines from large corporations that are stocked	05-04	DM
C5	Mr Raleigh calling?	Mr Raleigh failed as accompany when they stopped keeping do dads (80% of their lines generating 20% of their business) and stocked the 20% only that generated 80% of their revenue. Housewives such as my mother sweated on Mr. Raleigh and bought nick knacks – yin version of do dads – that they couldn't get a mainstream stores & and then were prepared to pay more than store price for flour i.e. main stable items. The 80% of the stock that generated 20% of the revenue generated 80% of passing trade – so to speak	05-04	DM , PW
C6	Lean Prod good idea but no go	Jim this is all good as far as it goes and thanks for continuing to send these intriguing missives – however I ask (as someone living in a culture antithetical to manufacturing and innovation and all the things that lean can build on – Australia – having been in the marine innovation business now for a couple of years and seeing just how far from lean everything is here – almost nothing in our business is made here – it is all imported and the companies who do the importing don't understand the tech specs of the equip. – and wont import till they have a container of back orders!!!!!! That takes months to cumulate – of 300 companies I have dealt with I have found 3 with good service plus even these all import their products) how can lean fit into a culture like this? Comrade this is impossible – though I hope that lean in view of this is not seen as quaint. We are at the other end to Toyota and are a very small business – however that's all Australia is - >85% small businesses – so unless lean will work in a culture like this and in small business it wont work in Australia. To: Jim Womack [mailto:jwomack@lean.org]	01-05	PW, DM
C7	Communitas	Supportive & encouragementive & capablising environ.		MS, RM

	[E] Learning			
L1	Learning before earning	RP, constant reflection & ‘turning it over & over in one’s mind’	04-04	DM, RP
L2	Life integration at action ground zero	Action – enactment as the point of integration rather than theoretical reflection	07-03	DM,
L3	World vision Bushie		08-04	RM, PW
	[F] The X Factor			
X1	The Unexpected	As the artifice project unfolds always be on the lookout for the unexpected & try to make her your friend	05-04	DM
X2	Not a Metrosexual more a dinosaur i.e. a dinosexual or bushosexual	Metrosexual - an urban male with a strong aesthetic sense who spends a great deal of time and money on his appearance and lifestyle (aesthete, bon vivant, epicure, sensualist) – I see the ms as the final capitulation by males to the feminism & the consumerist ethic- now it is personalized on appearance etc. MS to me is the antithesis of prosumerism. Dinosaur in terms of self-reliance & prosumerism – will go well in the coming ice-age.	05-04	PW
X3	Local	Recognise there is always potential in a local situation to learn from people/place/project/new products etc.	01-05	PW

Source: P Wildman 05-2004 comm. 12-02 DM – Don Miller; RM- Richard Mochelle; MS – Meriel Stanger; RP – Robert Pope; PW – Paul Wildman

* always one more than those articulated i.e. the X factor

** innovate/recombine with what is rather than create something completely new

***agency – capability, intent, commitment, reward

Table 2a Category Summary

Categories	Σ
[A] Task	T16
[B] The Person	P8
[C] Approach to Task	A11
[D] Context	C7
[E] Learning	L3
[F] X Factor	X3
Σ	47 @ 25-01-05

Source: P Wildman 05-2004

Application of Grounded Theory to Bush Mechanic Learning Insights 2002-04 [NB: this info feeds into T6]

Table 5a: Crosswalk: Application of Grounded Theory to BM research project field coding reports (2002-05)

	Grounded Theory Emergent Category [GTEC]	Explication of GT category	Learning Insights	Meta Lessons	Bushie Criteria
	[A] Task				
T1	Logistics	Logistics (50% time for hunting, poor service, lack of tech spec k as everything is imported)		ML2	
T2	Challenging	Keenness to try something new eg. prototype development, difficult application			
T3	'D'esign Dude	1/3rd of time is on – measuring I D I =1/3 1/3 1/3 all time on 'D'esign	LI:T8	ML10	BC3
T4	Weld Time	The aim is to validated proposition, ideas, concepts & design through a cycle between these & fact & measurement as one approaches 'weld' time	LT: T9		
T5	Resources	Has involved concerted effort over that 3 or so year period e.g. takes at least \$100,000aud in effort/time/cash/kind/contributions – often this effort is donated – pro bono – not necessarily literal			BC2
T6	Global Problematique	The project is realistically, directly and arguably derived through deliberation and experience aimed at bettering the lot of our children's children by concretely engaging/addressing a demonstrated need or emerging trend of relevance globally. Often such engagement occurs over a period of years and may well start from a displacement event or NIMBY – Not In My Back Yard, in either of these situations the big picture is not immediately evident however over time as ones analysis, experience and synthesis deepens the larger picture even ones relationship to the global problematique can emerge reflexively.			BC4
T7	Innovative Exemplar Projects	The Bushie project also aims to be innovative/prototype/exemplar			BC5
T8	Very few are called to be bushies interested in IDI	In the realms of boating less than 1% of those involved are interested in design and quality		ML7	
	[B] Tasker – the Person				
P1	Auto Run	Self referential (see standards) Self Discipline; Self referential – inner->outer power plant, values, and anarchist. Bushies understand standards yet set their own. Generally using their own <i>interpretative</i> standards are much 'fitter for use' than for instance Australian Standards that are used <i>reactively</i> by the run of the mill tradies. The standards generally refer to the fitness for use of the particular project underway. In this sense a custom power boat manufacturer will put the same quality into a \$0.1m go boat as a motor for a \$10000 fishing boat. Standards are recognised as political and favoring of the status quo thereby resulting in a reduced room and ultimately capacity for innovation.	LI:T3		BC7
P2	Deep Expertise	Decade of Praxis inc. I D I & C (customer/consumer/user of product)			BC1
P3	Under radar	Need to be under radar eg. no ABN, BAS etc. & peripheral to mainstream	LI:A7 LI:A5	ML3	BC8
P3	Comfort Pirates	Bushies are CP's to status quo			BC8
P4	Holographic: Simultaneous Tight ↔ Loose & detail ↔ big pictures	Obsession with detail while breathing the big picture and dreaming the finished project – very rare; get the dags while pickling each weld while polishing the beauty (SS welding)	LI:T2 LI:T12	ML5	BC6
P5	Tasker Time	Artificers simply take the time required & don't count it at the hourly rate of the market. Time passes differently/slowly/ organically/bumpily. Time is not spent it is invested in shaping the outcome	LT:T10 LI:A4		
P6	Integrity	Integrity, Ethics, transparency & 2 way critique	LI:P3		
P7	Multi tasked & Multi skilled	Need to be multi-skilled & multi-expertised	LI:P4		
P8	Agency	Active belief in artificer agency & that 'prosumerism' is valid & important, and that a person (bushie) can act efficaciously in, on & with the system to create, innovate, incentivate, productivate & prosumerate	LI:P5 LI:A9		
P9	Next Generation Bushie	Bushieness as in self-reliance, inventiveness, resilience, keeping own company, collegiality, fairness, honesty, frankness, resourcefulness cant be bred or regulated out of the human condition although it is getting harder & harder – the next generation will have to be far more inventive than today	[DM]		
P10	Task Time	Stretches over at least 3 years (specific Bushie project 3years Bushie apprenticeship usually 10 years)	[DM, PW, MS]		
	[C] Taskee [the Customer]				
Cus 1	Don't rub out the customer	The customer is not to be trivialised rather drawn into joint planning & even acting as 'gofer' i.e. each stage of the overall I D I process esp. the first two. I was rubbed out 5 times in 2 hours am 06-05-04. DIY turns out to be DIY with what we have on the shelf & that's it [See Bloomer Doomer]	LI:A10	ML9	
Cus 2	Deep service	Vertical (interest in concept & design) and Horizontal (interface) between nested systems; Service aimed at assisting the customer to get the whole job done; to value add in bottlenecks; to find ways out of dead ends, to appreciate	[PW]		

		<p>struggle to get parts. Artificers & Artisans are custom fabricators of prototypes.</p> <p>Consumerism pushes us to consume & to be only concerned about the superficial (store shelf) products not how or where they are produced or to even consider producing them ourselves let alone seeking to improve them.</p> <p>Legal considerations, expressed through the courts, insurance & bureaucratic administration, also lock concepts up in category boxes in little things such as trailer hitches & and so prevent innovation in the field/periphery. Innovation in the centre, when it does happen, suits the macro manufacturer eg. 5 year warranties on vehicles make you use them for servicing etc.</p> <p>Service becomes reconceptualised as service as supplying what we have on the shelf at the time & has little if anything to do with actually helping you get your job done.</p> <p>The overall impact of this is what I call the long hollowing of Australia in that we become warehouses who don't understand what we warehouse or how to use it let alone make anything new with it. Further consumers who wish to be prosumers are regularly rubbed out eg. I was rubbed out 5 times in 2 hours am 06-05-04. DIY turns out to be DIY with what we have on the shelf & that's it, as companies only seek to deal with large account holders.</p> <p>I have realised that academics who only deal in arranging words on standard Govt issue computers, never things- never experience this they are at the cognitive or idea end of the spectrum & hyper busy writing articles & courses. It gets worse as our Western epistem means is that thinkers and doers are separated with innovators & custom manufacturers being seen as doers. Academics, CEO's, politicians, senior bureaucrats are seen as thinkers and not doers & thus the long hollowing never gets to be recognised as important & even if it was, politicians who manage the spoken word couldn't recognise it as important so innovation formation is blocked and innovation transmission is stymied and innovation osmosis prevented. All this speaks of dire consequences for any attempt at social innovation.</p>			
Con 7	The buck bites back	Cost structure now precludes such artificing - \$70phr for electricians, boat techs etc. This means many products are now just thrown out not repaired	LI:C3	ML1	
Con 8	The disappearing doodads	For artificers to survive let alone thrive hardware stores & chandleries have to stock heaps of do dads – increasingly it is just the main lines from large corporations that are stocked [is there a link between doodads and gonads?]	LI:C4	ML8	
Con 9	Mr Raleigh calling?	Mr Raleigh failed as accompany when they stopped keeping do dads (80% of their lines generating 20% of their business) and stocked the 20% only that generated 80% of their revenue. Housewives such as my mother sweated on Mr. Raleigh and bought nick knacks – yin version of do dads – that they couldn't get a mainstream stores & and then were prepared to pay more than store price for flour i.e. main stable items. The 80% of the stock that generated 20% of the revenue generated 80% of passing trade – so to speak	LI:C5		
Con 10	Lean Pro is a go idea but no go'yo hero in Aussieo	<p>Jim this is all good as far as it goes and thanks for continuing to send these intriguing missives re lean production – however I ask (as someone living in a culture antithetical to manufacturing and innovation and all the things that lean can build on – Australia – having been in the marine innovation business now for a couple of years and seeing just how far from lean everything is here – almost nothing in our business is made here – it is all imported and the companies who do the importing don't understand the tech specs of the equip. – and wont import till they have a container of back orders!!!!!!</p> <p>That takes months to cumulate – of 300 companies I have dealt with I have found 3 with good service plus even these all import their products) how can lean fit into a culture like this? Comrade this is impossible – though I hope that lean in view of this is not seen as quaint. We are at the other end to Toyota and are a very small business – however that's all Australia is - >85% small businesses – so unless lean will work in a culture like this and in small business it wont work in Australia.</p> <p>To: Jim Womack [mailto:jwomack@lean.org]</p>	LI:C6		
Con 11	Bushie Sustainable Devt.	A key issue to address for sustainability is consumerism & planned obsolescence – bushies address both however such an approach does not fit with the FTA – this does not point to a good future for our grandchildren		ML8	
Con 12	FTA	Wage rates in Indonesia – Jakarta are \$50audpwk cp. \$2000audpwk inc. adjusted for productivity, on costs & compliance costs + there is a middle class market of 100m within 200km of the point of production whereas in Aust the market is 3m – in a FTA environment Aust manufacturing etc. goes nowhere		ML8	
Con 13	Sloth of Despond	In taking on a full project such as boat II one will have ones determination tested, become depressed, loose the plot, run out of money & patience, stare failure and the dreaded UP ad (Unfinished Project) in the face, be exhausted, confront the lack of service in Aust on a daily basis		ML6	
Con 14	Communitas+	Support network, community of like minded, fraternity, learning circle, for better or worse, practivting comrades, informal groups/family; engaged citizenry	LI:C7		
Con 15	Communitas-	The basic lack of structure or market awareness or proactivity in the informal sector. The way the formal sector seeks to maintain even deepen this by colonising the informal; over the past generation it has miniaturised, marginalised, disrupted, disreputised, deglobalised, regulated largely out of business and chaoridified the small scale & the informal – the realm of the BM. Yet this end of the enterprise spectrum is where innovation occurs and it comprises 3/4ers of the Australian economy and	[PW, DM]		

		provides around 80% of employment for Australian households 31-01-05			
	[F] Learning from the Task				
L1	Bushie learning = Artifice Learning = sub set of Action Learning	BM is a sub set of Action Learning and its partner Action Research in turn they are sub sets of methods of engaged learning i.e. learning by doing and in turn they are a sub set of processes that seek to re-legio – re link – thinking and doing. Action Learning does this through an iterative cycle of: →intending →acting→ observing→reflecting/learning→intending→ [see Wildman (1997)].			BC14
L2	Learning before earning	RP, constant reflection & ‘turning it over & over in one’s mind’	LI:L1		
L3	Life integration at action ground zero	Action – enactment as the point of integration rather than theoretical reflection	LI:L2		
L4	Make your contribution	Each Bush Mechanic has a particular modus operandi and local wisdom – local theory – contribute yours in your project and in the overall bushie system.			BC12
L5	Extend Bushiedom ACE courses in being a bushie	A commitment to understand/learn the Bush Mechanic Lore, to spread the word and network with other BM’s: [unique to BM] Inc. mechanics discipline, method and magic esp. in supporting other bushies in their artificing** projects and involving young folk – apprentice bushies and so forth			BC11
L6	From Case to Theory	Bushies can find it difficult to be able to generalise & ultimately theorise from individual projects & cases	[PW]		
L7	World Bushie Volunteers	One way to aggregate fractional bushie effort	LI:L3		
L8	Whither Developed Economies?	First world (Western) economies (inc. Europe – Germany & France) are going through a long hollowing [see Con6] & with wage etc. differentials less and less of everything is being sourced there from yet the West maintains its expensive lifestyles ‘the American lifestyle is not negotiable’, the third world; in this sense bushie economy will reverse its downward spiral of the past generation & increase in importance in western economies yet be more illegal over the next decade. Really smart intergenerational money will move off shore to developing third world economies for our grandchildren’s sake 2025. In this scenario the first and third worlds swap places over a generational period starting around 2025.	[PW]		
	[G] The X Factor				
X1	Harness sparkle	Inc. fun, sparkle, synchronicity, serendipity, co-incidence, (bad) luck.....			BC13
X2	The Unexpected	As the artifice project unfolds always be on the lookout for the unexpected & try to make her your friend	LI:X1		
X3	Not a Metrosexual more a dinosaur i.e. a dinosexual or bushosexual	Metrosexual -gen. an urban male with a strong aesthetic sense who spends a great deal of time and money on his appearance and lifestyle (aesthete, bon vivant, epicure, sensualist). MS to me is the antithesis of prosumerism. Dinosaur in terms of self-reliance & prosumerism – will go well in the coming ice-age.	LI:X2		
X3	Public perception of Bush Mechanic as Backyard Mechanic i.e. Dodgy Daves Deals	City folk have a pejorative view of bushies as folk who don’t understand much are pretty dumb, try to make everything work with fencing wire & are a bit dodgy a bit like back yard mechanics or second hand care salesmen. Well TV programs like Bush Mechanics, Iron Chefs, and Junkyard wars and our artisan/artificer experiences all demonstrate that this is couldn’t be further from the truth. Such Bushies have an acute understanding of the Idea Design Implementation process, very high professional standards and could build a rocket if given half a chance (and the availability of parts to do so), however city folk usually only see their artifice genius manifest with fixing things with fence wire.	LI:P7		
X4	Do the hard yards have the track record	Peer respect comes from doing the hard yards over many years, using a pilot project to obtain experience (fugly), see how others walk their talk, hard yards is about you walking their walk so you can talk their talk	LI:P8 LI:A6		
X5	Doing as Braiding	Fact, Value, Theory Enactment - braiding of similar import	LI:A1		
X6	Local Learning	Always allow for the local conditions/context/people to value add	LI:X3		
X7	Strange Attractor	Formal structures don’t work for bushies either economically or skill development wise or information wise what is needed is a strange attractor e.g. blog in the informal sphere that can put bushies in touch with one another e.g. one exemplar project to another.	[PW]		

Source: P Wildman [paul@kalgrove.com] 20-01-2005 comm. 14-01-05: 3000 words. Source: Categories developed from field coding reports viz. (1) Learning Insights, (2) Meta Lessons & (3) Bushie Criteria files

Table 5b: Grounded Theory List of Meta categories

Meta Category	Number of observations in respective category
[A] Task;	08
[B] Tasker – Bush Mechanic – the Person	10
[C] Tasked – Customer;	09
[D] Approach to T;	07
[E] Task Context;	15
[F] Learning from the Task;	08
[G] The X Factor	06
Σ	63

Source: P Wildman 05-2005

Table 6a: Developing Grounded Theory Emergent Categories (GTEC) from Meta Meta Bush Mechanic Attribute Categories (MMC) from Grounded Theory (GT) Coding [Table 5] from Learning Insights coding [Table 2; Meta Lessons Table 3 and Bush Mechanic Criteria Table 4]

No.	Meta Meta Category (MMC)	Meta Category (MC)	GT Coding Category: (GTCC)	GT Coding Category Σ	GT	Ref: GTEC* see T5
MM C1	'Design	Task Process	1: IDI	Idea Design Implementation, whole project (vertical – hierarchical/design systems & horizontal – nested systems) <i>IDI incs. design & interface</i>		T3; T8;
			2: Interface	Interface between project systems, IDI, with customer, standards, whole system focus etc. Interface has several depth dimensions: (1) one sub system links to another and to the larger system (2) the whole integration of systems works (3) the integrated system functions on a 'fitness for use' basis (4) the exemplar project interfaces efficaciously with the larger picture of the artificer's life purpose.		Cus2; Con4, A7
MM C2	Agency Task Structure (J)	Task as linking agency & Structure	3: Agency V's Structure	Achieve a dynamic balance in favour of agency (<i>agency in the sense of interdependency inc. tasker and taskee in this model BM and Gofer</i>)		[PW] Con2; P8
		Task as linking at & in hand	4: Task at hand – upwards to global p	The TAH is consciously articulated upwards towards the global problematique, laterally with the actual customers requirements & downwards to the nuts, bolts & washers needed to undertake it		T6
			5: Task in hand – downwards to finesse & fit	Task is seen by way of exemplar project as a perspective on life – other perspectives are also valid		Table5a:T7
MM C3	Expertise (J)	Tasker	6: Expertise (a)	Deep Expertise BM in areas of basic trade, innovation, environ, customer relations, application to task		P2; P7;
		Taskee	7: Expertise (b)	Customer – sub prototype experience, can use tape measure (<i>taskee = customer = gofer</i>)		Cus6;
		Standards	8: Standards (a)	Importance & political nature, not as imp. as personal/professional standards		P1; X3
		Standards	9: Standards (b)	Professional standards in terms of job, deep service, systems interface & customer liaison		X3
		Integrity	10: Integrity	Integ, ethics & collegial		P6; Cus3;
		Under Radar	11: Under Radar	BM has ability for thrival		P3; Con1;
		Deep Service	12: Deep Service	Don't rub the customer out, interface, whole project delivery, vertical & horizontal		Cus2; Con6; Con10; T1
		Community context	13: Communitas+	Supportive & encouragementive & capablising environ/social holon. Community expertise, informal networks, (under radar) engaged citizenry (see also MMC4)		Con14
			14: Communitas+	The basic lack of structure or market awareness or proactivity in the informal sector, and how this is contributed to by the formal sector		Con15
MM C4	Personal commitment (\$, λ , ψ , brain physical)	Personal Devt. - Gofers Journey	15: Sloth of Despond	Personal/customer despair/anger at all the above (Taskee primarily Tasker has been there done that) See also MMC3:12 - Communitas		Con13
		Resource	16: Resources (\$, λ , ψ)	Has taken substantive resources in \$ & kind to \$0.1m		[PW]
MM C5	Enactment quality of consciousness	Consciousness as braiding	17: Braiding – thinking & doing	Doing braided with Thinking not as dialectic – <i>thinking braided with doing = being = quality of consciousness</i>		A6; X5
MM C6	Time (J)	Task	18: Task Time	Stretches over at least 3 years (specific Bushie project 3years Bushie apprenticeship usually 10 yrs)		P10
		Tasker	19: Tasker Time	BM has artisan not economic approach to time		P5;

		Taskee	20: Taskee Time	Bushie gofer has time to spend 2-3days per wk OTJ	Cus5; Con13
		Taskee	21: Protirement	Taskee Resources & Time to allocate to major project 3yrs	Cus5; Con13
MM C7	Host positive economy	Sub-altern economy (J)	22: Alternative Economy	FTA etc means prosumerism & BM is dinosauristic, under radar see above	Con1; Con6; X2; P8
		Intergenerational Macro Economic Impact	23: Wither Developed Economies?	Result of the long hollowing in developed economies i.e. the bushie economy will be more important but more illegal over the next decade & our grand children need us to engage third world as it is the economic lighthouse for their grandchildren and we become third world	L8
MM C8	Bushie devt.	Learning's	24: From Case to Theory – Local Theory with a grin	Bushies need to be able to tell their story more fully & self reflexively & even to stet about a generalisation process towards general theory	L6; L4
		Collective Priactive	25: World bushie Volunteers	To aggregate fractional bushie effort, world stewards/citizens, <i>bushies encouraging collective participation in I D I 'ing the Task At Hand</i>	L7
		Local → General	26: Local → General	Always allow for the local sparkle/ conditions/context/ people to value add i.e. add your criteria then move to global i.e. from now to future from local to general	X6; X7
		Strange Attractor	27 Strange Attractor → Blog	Bushiedom needs a strange attractor such as a blog or bushie TV series to allow informal learning and yarning	[PW]
		Informal learning	28 Informal Learner	Bushies are often autodidacts – informal or intuitive learners – not nec. Skilled by the formal system	[PW]

Source: P Wildman 25-01-05 * Grounded Theory Emergent Category (GTEC) OTJ On The Job (J) substantially joint categories i.e. tasker and taskee

Table 6b Grounded Theory Emergent Category [GTEC]

Symbol	Meta Category
T	Task
P	The Person – the bushie
Cus	Customer
A	Approach to Task
Con	Task Context
L	Learning’s (lessons)
X	The X Factor

Source: P Wildman 25-01-05

Table 6c: Summary Table Meta Meta Bush Mechanic Attribute Categories* [MMC]

No.	Meta Meta Category	Meta Category	GT Coding Category: GTCC
MMC1	'D'esign	Task Process	1: IDI
			2: Interface
MMC2	Agency Task Structure (J)	Task as linking agency & Structure	3: Agency V's Structure
		Task as linking at & in hand	4: Task at hand – upwards to global p
		Perspectival	5: Task in hand – downwards to finesse & fit
MMC3	Expertise (J)	Tasker	6: Expertise (a) - Tasker
		Taskee	7: Expertise (b) - Taskee
		Standards	8: Standards (a) - political
		Standards	9: Standards (b) – personal→professional
		Integrity (J)	10: Integrity
		Under Radar	11: Under Radar
		Deep Service	12: Deep Service
		Community context	13: Communitas +
			14: Communitas -
MMC4	Personal commitment (\$, λ, ψ physical)	Personal Devt. - Gofers Journey	15: Sloth of Despond
		Resources	16: Resources (\$, λ, ψ)
MMC5	Enactment quality of consciousness	Consciousness as braiding	17: Braiding – thinking & doing
MMC6	Time (J)	Task	18: Task Time
		Tasker	19: Tasker Time
		Taskee	20: Taskee Time
		Taskee	21: Protirement
MMC7	Host positive economy (J)	Sub-altern economy	22: Alternative Economy
		Intergenerational Macro Economic Impact	23: Wither Developed Economies?
MMC8	Bushie devt.	Learnings	24: From Case to Theory – Local Theory with a grin
		Collective Priactive	25: World bushie Volunteers
		Local → General	26: Local → General
		Strange Attractor	27: Strange Attractor in informal space - blog
		Informal learning	28: Informal/Intuitive learning

Source: P Wildman 02-02-05 (J) Joint – tasker and taskee * developed experientially 03-04 (not using grounded theory)

Table 6d: Summary of Emergent Proto-Theoretical Relationships from Grounded Theory Meta Meta Categories [EPTR]

This Table is largely text however it is allocated at Table number to continue the reporting theme plus provide an overarching title for the sub-tables within this summary.

1. [EPTR 1 - Harnessing Customers expertise in Vertical Voc Ed] There seems to be a unique way of **harnessing**, and conceptualising the **BM's and customers expertise** to the task environment at hand. 31-01-05: MMC2; MMC3.12. A **vertical way of extending specific vocational skills** into deep service and interface compatibility (nested systems/holon) MMC1.2
2. [EPTR 2 - Braids Thinking and Doing] This **braids thinking and doing** in the sense that the BM becomes the task and the task becomes an expression of the BM and it all becomes an exemplar project with high level professional standards it is a consciousness thing. 31-01-05: MMC3.8&9; MMC5
3. [EPTR 3 - Sub-Altern Economy] The host positive **sub-altern economy** is inseparable to a broader performance of BM outside the family yet still in the informal economy within the informality of communitas. 31-01-05: MMC7; MMC3.11&13
4. [EPTR 4 - 'D'esign] Important psychological markers have to some extent been redefined eg. dollars, reward, time & task in that it now involves **'D'esign**, (I-D-I) the environment, the customer & the future but all in the crucible of the informal communitas/economy. 31-01-05: MMC1.1; MMC6
5. [EPTR 5 - Commitment] Takes substantial **ongoing mutual commitment** and development of resources (\$, λ , ψ , expertise and physical) 31-01-05. MMC4.15&16
6. [EPTR 6 - Integrity] BM can't exist without very substantial mutual commitment and **integrity** by both BM and Customer **and** Environment. 31-01-05. MMC3.10
7. [EPTR 7 - Bushy Extension needed] Bushies have generally not thought a lot about generalising their experiences and establishing better connection to the big picture/global problematique, so a **bushy extensions service/process** would be an advantage. 31-01-05.
8. [EPTR 8 - Respect the Informal Sector] The preponderant basic lack of structure or market awareness or proactivity or even the most basic organisation in the small end of the formal and bigger end of the informal sector inc. small businesses, business organisations and community organisations. The way the formal sector seeks to maintain even deepen this by colonising the **informal**; over the past generation it has miniaturised, marginalised, disrupted, disreputised, de-globalised, regulated largely out of business and chaoridified the small scale & the informal – the realm of the BM. Yet this end of the enterprise spectrum is where innovation occurs and it comprises 3/4ers of the Australian economy and provides around 80% of employment for Australian households 31-01-05. MMC3.14

9. [EPTR 9 - The Bushy as specialised generalist] - There is some evidence to suggest the trade master as artisan is a specialist i.e. a specialist degree where as the artificer is a generalist specialist a jack of all trades and master of many a **specialised generalist**. This allows interface.

10. [EPTR 10 - Grounded Theory Emergent Categories (GTEC)]

Table 6b Grounded Theory Emergent Category (GTEC) content categories. This taxonomy was sufficient for the whole exercise.

Symbol	Meta Category
1 T	Task
2 P	The Person – the bushie – the tasker
3 Cus	Customer – the taskee
4 A	Approach to Task
5 Con	Task Context
6 L	Learning’s (lessons)
7 X	The X Factor

Source: P Wildman 02-05

11. [EPTR 11 - Comparing the Bush Mechanic and the Backyard Mechanic]

Table 6c Dodgy Dan the Backyard man is very different to the Bushie i.e. Backyard Mechanic ≠/ Bush Mechanic

	Backyard Mechanic	Bush Mechanic
1	Cheap & Nasty	
2	Fixes the existing	Blends the existing with the innovating
3	Under radar	Under radar
4	No big picture	Clear articulation to big picture
5	Minor, if any, focus on interface	Major focus on interface/big picture integration
6	Works from experience	Works from experience, blueprints, & can draw up same
7	Not qualified but is experientially qualified	Need not be paper qualified but is experientially qualified
8	Battler	Workstyle manager
9		
10		

Source: P Wildman 02-05

12. [EPTR 12 - Journeyman’s piece as an Exemplar Project] **The journeyman’s piece can provide a vehicle/exemplar project** to move from artefact maker (tradie) to artisan to artificer. MMC2.5

13. [EPTR 13 - Bushy Contact Pattern] Formal structures don’t work for bushies either economically or skill development wise or information wise what is needed is a strange attractor e.g. blog in the informal sphere that **can put bushies in touch with one another** e.g. one exemplar project to another. MMC8.27; MMC8.28

Ch 3 - Comparison of Artificer Learning criteria – comparing the Praxis Derived criteria (2000-2003) to the Grounded Theory emergent criteria (2002-2004)

Table 8: Comparison of Artificer Learning criteria – comparing the Praxis Derived Criteria (2000-2003) [PDC] to the Grounded Theory Emergent Criteria (2002-2004) [GTEC]

No.	PDC Praxis Derived criteria 2000-2002	GTEP Grounded Theory Emergent Principle/criteria categories 2002-2004 of (1) Exemplar Project (2) Seeing the EP as a social holon (3) Linking the EP to the Global Problematique (4) The vitality of learning from the overall process (that braids thinking and doing)
1.	Timeline	GT 1, 4
2.	Resources	GT 1
3.	Uses the 'D'esign not 'd'esign Process: [unique to BM]	GT 1
4.	Deliberatively identifies and concretely engages the Global Problematique [unique to BM]	GT 2, 3
5.	With innovative exemplar prototype projects for social innovation: [unique to BM] Error! Bookmark not defined.	GT 1, 2
6.	Whole project focus with practical attention to detail & interface [unique to BM]	GT 1, 2
7.	Bushies are professionally self reflexive about standards and lessons leant	GT 1, 4
8.	BM's as Prosumers and live on the periphery as comfort pirates: [largely unique to BM]	GT 2 (part)
9.	Is undertaken professionally yet largely in the informal sector	
10.	Reflexive yet objective – the learning criteria	GT 4
11.	A commitment to understand/learn the Bush Mechanic Lore, to spread the word and network with other BM's: [unique to BM]	GT 4
12.	Include your criteria	GT 4
13.	Harnesses the X factor:	GT 1-4
14.	BM a subset of Action Learning where philosophy is seen as wisdom in action and trinking and doing are braided with meaning in the rope of being	GT 4

Source: P Wildman 05-2005

Observations:

1. There is a 100% overlap in coverage although depth varies somewhat between the two taxonomies
2. The Praxis derived criteria do not put as much focus on linking to the Global Problematique as the Grounded Theory criteria do
3. The Praxis Derived criteria identify learning as much more important than do the GT criteria
4. The Praxis Derived criteria do not strongly identify the need for the Exemplar project to be conceptualised as a social holon cp. the GT criteria

Ch 4 – Summary - Outlining an emergent Local Theory of Bush Mechanics in four Principles cross linked to ETPR:

Derived from the above Emergent Proto-Theoretical Relationships (ETPR's – Table 6d) which were developed from the Meta Meta Bush Mechanic Attribute Categories coding (Table 6c) which in turn were developed from Tables 6a&b: Meta Meta Bush Mechanic Attribute Categories (MMC) which in turn were developed from Grounded Theory Coding [Table 5] based on Learning Insights coding [Table 2; Meta Lessons Table 3 and Bush Mechanic Criteria Table 4]code grouping of learning insights recorded progressively over the past 2 years for the duration of the Bush Mechanic Grounded Theory Action Research Project - in priority = More General (though not universal*) Bush Mechanic Theory

Key Theoretical Principles of a Bush Mechanic identified in the research project? [BMP – Bush Mechanic Principle]

As a result of this Grounded Theory Action Research Project conducted from late 2003 to early 2005, Bush Mechanic may be defined as someone who demonstrates the following attributes. NB: as indicated previously Bush mechanic may also be called Artificer or a process of Futuring. The Four Attributes revolve around the grounded concept of the 'exemplar project' and hopefully can provide the basis of a new 'theory of bush mechanics', as such the attributes point to a grounded form of vocational and citizen education that has almost faded from view in developed nations in the past 50 years. Bush Mechanic Principle (BMP)

BMP 1 Exemplar project Principle

1.a Exemplar Project

Exemplar project means *a holonomic multi system interfaced* deep service, anticipatively and participatively 'D' esigned and enacted long term project or task exemplifying ones raison d'etre** using appropriate technology*. For example a project that draws from the BM's learning over a decade of praxis as in broad committed experience. This praxis has helped generate a grasp of the big picture while understanding the small picture from its components in detail, as well as how the sub systems interface. The exemplar project often occurs in the sub-altern largely informal economy. It does so with business discipline, vocational expertise and social context, that braids thinking and doing; part and whole; individual and collective, all into 'being' as in a manifestation of the human 'being' of the bush mechanic and is aimed at bettering the lot of our fellow human in line with the requirements of the global problematique.

The exemplar project is in effect a harmony of interface in conception, design and implementation in a project towards a better world.

Most design these days occurs for small sub sets of the world system eg. a building or a road it does not occur for collectives like community or city or nation etc. Jantsch (1975). Technological and social innovation and sustainability relates to this principle.

Furthermore these initiatives are oftentimes anti citizen in terms of citizen rights and participation rather than being pro citizen and derived from the citizen. Progress here then breaks from the Baconian view of that of modernity wherein progress is seen as uniquely obtained by the application of science cp. normative techniques. Berneri, M.

(1982:129). Social design and innovation are left stagnant while technological innovation runs wildly ahead nowadays converging with Genetics, Nanotech and Robotics. In short the exemplar project may be seen an anticipatory action learning project as a exercise in futuring.

* interface – critical part of synthesis cp. analysis which by definition is about deconstruction. For interface dimensions see next section

**the purpose that justifies ones existence – avocation – calling

1.b Interface – Depth, Breadth and Context – Interface as Grand Synthesis

Interface is a form of *synthesis* (combining of separate components into a coherent whole from the particular to the general)/*integration* (the process of combining various components into a state of completeness and harmony) and organically terms such as *symbiosis* (interdependency between dissimilar organisms)/*co-operation* (joint association for a common benefit) and *mutual-aid* (arrangements between individuals or organisations to achieve a common end).

This research project has identified *interface* as a key attribute of bush mechanics to the point where in the next section it is seen as a form of power. Thus the Exemplar Project is a form of ‘grand synthesis’ where the whole is more than the sum of the parts. Such synthesis is rare to find in Western culture with its specialisations and divisions of labour etc. Examples abound in private and public life of non sequiturs, mismatches, interface failure, lack of socio-technical systems development to meet the demands of technical systems development. Le Grande Synthesis seems indeed an elusive dream.¹

I think Bucky Fuller would agree that complete symmetry is often not relevant to synergy. Synergy is determined by interface relationship rather than component similarity or direct comparability; as Bucky would say, a wheel in a box does nothing, a wheel under a box (e.g. wheel barrow) does plenty; hence, it is not the components of the system but the relationship among the components that makes for synergy. So, the question is: what relationships among the organizations would make synergy.

Less integration More interface

Today in operational terms interface is more important than ever if only for the simple reality of the sub-contractor, for instance most builders inc. vehicle builders such as Toyota now use a huge even thousands of sub-contractors to supply parts and provide services. No longer the huge conglomerate corporation doing all and making all as GM in the 1960’s, rather a de-integrated and highly interfaced network of discrete manufacturers each have to provide what is required when it is required precisely as it is required. Indeed one Australian machine tool manufacturer Global Machinery

¹ Although not immediately or even clearly visible integration/yin/soft technologies are emerging as the cutting edge in physical science eg. Neuroscience, military hardware, meat-data manipulation of data sets inc. informatics and web languages, environmental science. As discussed above very little of this knowledge has been applied in the social sphere. One area where interface is vital is in the broking industry e.g. financial, technical, marriage etc. broking.

Such **interface brokers** can: (1) track their area over the long term, (2) are very familiar with the market’s prospects and (3) are on top of the technical complexity of the technology, (4) know how to integrate it with other related technologies, (5) and who understand structural requirements (laws, management etc.) while (6) knowing how/who to choose appropriate experts to draw specific intelligence from, and above all (7) who in spite of all this inc. a customer not savvy in all the above, can still get into one shoe of the customer (empathy) and design a brokered package that best suits his or her needs over the next say 5 years. [with excessive red tape (5) *interface* can quickly become *interference* and *broking* become *blocking*].

Company – designs tools in Australia for Australia and has them made in China by totally separate and sub-contracting companies. GMC does not manufacture even a screwdriver!!

Interface has some twenty attributes in some 20 attributes

This book maintains that interface concept is in reality a form of yin technology where as yang technology is more directed at specific items such as a big(ger) rocket or car where the item itself is the focus of the technology whereas in interface technologies (see I2 below).

Objectifying interface as a concept i.e. interface as evident in these all these attributes, can be seen in the term interstice. Further we see echoes of recognising the ‘gap’ between posts, or silence between words, or crack in consciousness, the challenge of ‘in-betweenness’ or ‘intersticeness’ as the source of inspiration, innovation and insight. This interstice silence is sought out in mediations. The non space the pillars, the posts, the words, the academic and vocational disciplines, are generally colonised by the status quo and so to think newly we have to find spaces and gaps in this ‘regularised’ noosphere. Such analysis is crucial to the sort of innovation process explicated in this piece. Furthermore feminist theory has the theory building concept of ‘out of the silences’ i.e. ‘out of the interstices’ this is where one builds theory as where there is noise we have colonisation by the status quo, where we don’t have noise we have the disappeared ones, the silenced ones, the powerless – this is where we find injustice.

These twenty one attributes include for example: **(I)nterface:**

(I1) within components and (I2) between components e.g an interface screen in a car stereo system that by selecting/touching which you want to activate i.e. phone, DVD, audio, navigation these are then selected for you without any switching/plugging etc., (I3) between components and the overall design and (I4) between the overall design and its use; (I5) between the exemplar and exemplum through techne; (I6) between the overall design its use and its user; (I7) between the overall design and its operating environment inc. the; (I8) operator as well as; (I9) within the operators skill and agency areas and; (I10) between the overall design and the meta goals to be interfaced e.g.; (I11) *fitness in use* in addressing the global problematique through the operation of the exemplar project, as well as (I12) the lateral interface design dimension missing in bureaucracy, while (I13) interface with the informal power systems are crucial as are; (I14) links to learning; (I15) the interface with the overall design process; (I16) the interface with happenstance, synchronicity and deeper causations of creativity; (I17) transit through interface i.e. the context interface, for instance cross fertilisation where one field moves through the interface and fertilises developments in another; (I18) a content interface where the interface itself becomes for instance the Exemplar Project or a discrete arena of knowledge e.g. Community Economic Development arising from Economics and Social Work disciplines is combined into a discrete discipline in for instance Simon Fraser University; (I19) failure interface wherein although the Titanic, Hindenburg or Kursk may be respectively state of the art ocean ship, airship or nuclear underwater ship (submarine) when failure occurs what are the back up and escape systems etc., o often these are ill thought out and rehearsed and in an emergency found wanting and finally (I20) tool interface here the Artificer is involved in the fabrication of the tools he uses to make her exemplar project. (I21) active citizenship where the artificers role interfaces with and is an important and respected part of the polis.

In a broader sense interface between the Artifice Learner and the broader social context of the Exemplar Project is paramount. In this sense the EP as Social Holon

concept is retroductive and folds back to include the Bush Mechanic as well. This means that there needs to be an efficacious interface between Social System (system), Bush Mechanic (agency) and Exemplar Project (process) for positive outcomes from the EP to emerge. In terms of our vernacular we can see interface in the oft heard saying 'join the dots'.

1.c Exemplar Project and Artificer 'Power'

The bush mechanic is naive and more so post rational naiveté than pre rationally naive. Too much water has flowed under their bridge for them not to be. In this sense most bush mechanics are individualists not so much group workers. Often bush mechanics have had very salutatory experiences with power in the political and judicial sense and have lost faith in the formal power structures in society.

Structurally power has been removed from social entities such as bush mechanics, prosumers in particular and most forms of self reliance in general. In many ways bush mechanics are nowadays illegal. Interface as process has been appropriated by public sector surveillance structures and interface as product has been appropriated by the corporate sector. This process called interface appropriation producing a dependent public evidencing 'learned helplessness' I maintain 'designed interface helplessness and associated structural dependency, is discussed further in the exemplar project section above.

One may say that bush mechanics operate from a basis of artifice(r) power which includes, expertise or artisan power as well as interface power; and then from agenda power; and then relational power with little or no claim to positional, coercive, financial or cultural powers e.g. as a chief executive officer, senior politician or manager may have - primarily the power of one. Gaventa (1980). In a sense one may say given the present cultural position of homogenisation of tastes and dumbing down through regulation bush mechanics operate a sort of synthesised almost alternative-cultural power. An example of a bushie into overt power would be a rare creature indeed – a statesman.

1.d Bush Mechanics as collaborative individuals and the exemplar project as an example of/strange attractor for, such collaboration

Bush Mechanics integrate life at the individual perspective then collaborate, integration is not from the group perspective rather it is as indicated around the individual as expressed through the exemplar project. The global problematique and exemplar project principles insist bush mechanics do link to the big picture which by definition takes what may be called 'collaborative individualism' even 'mutual aid anarchism' rather than group think. A community of bush mechanics is in many ways the anthesis of the hive or the ant colony, more a collection of equal individuals collaborating to achieve common goals. In ancient Greece 4thCBC this was called isonomy of which a depreciated version became known as democracy.

1.e The Exemplar Project and the three types of design

'D'esign in this sense includes Idea | Design | Implementation i.e. Concept/Thinking/Imagining | Scenarios/Blueprints | Strategic Plan/Enactment/operations. Generally 'd'esign is just taken to apply to the second stage whereas in Quality literature and in this project design is taken to mean 'fitness in use'. As such 'd'esign applies to thought bubbles, scenarios, blueprints and strategic plans. The exemplar project moves beyond d to D and ultimately **Design**. This involves the artificer and the client/customer in co-designing the project in the 'D' sense.

Three types of design: In a broader sense one may say the second ‘I’ related to the tradesman who follows:

- (1) a ‘d’esign i.e. drawing up a blueprint, whereas
- (2) the I | D | I ‘D’esign process is more related to the Artisan who can develop and follow a ‘D’esign, and the Artificer extends this to
- (3) ‘D’esign and uses an extended [P] | I | D | I | [L] process, the extended ‘D’ process, where P stands for Participation, using agreed rules of engagement, in determining key attributes of the Problematique – a metaconstitution if you will, the ‘D’esign process is embodied for the Artificer in the Exemplar Project. And L stands for Learning from the foregoing process.

Table 7: The PIDIL Cycle – the components of the ‘D’esign process

P	I	D	I	L
Participation	Idea	Design	Implementation	Learning
Problematique, participation, rules of engagement, meta constitution	Idea, Issue, Intuition, even ‘bliss’	blueprint, thought bubbles, scenarios, strategic plan	Exemplar Project, Enactment, Training, logistics	Learning, Reflections, Midwife, bubble, Insights, Local Theory→General Theory
	Constitution I→D		Consumption	Teacher
		Law D→I		
		Tradesman D→I		
	Artisan	I→D→I		
Artificer P→L				
Citizen P→I				
Ethics P→D				

Source: P Wildman 03-05 **NB:** Each component may be considered to have a ‘strength’ say out of 10 and not all exemplar projects/Artificers score 10 in each of the above components, nor is there necessarily any ONE way of ‘doing’ a particular component. What is critical though is that ALL the above components exist overtly as in integral, not assumed or subsumed, component of the design process. For instance conventional cognoscenti social science focuses almost exclusively on I [Idea] while training concentrates on I [Implementation]

1.f Exemplar Project - Exemplar Service

Deep service that includes the whole piece/project, inc. interfaces, clean up, fitness for ultimate (not only component) use, and does not ‘rub the customer out’ yet involves her in the ‘D’esign process.

Evaluation 1a, 1b: used to be called journeyman’s piece (homo faber – Arendt (1958)) or now masters thesis or master piece – not used today as CBT and computers remove the need for whole system wisdom – today EP’s eg SARC’s or boats are seen as indicators of the eccentric.

1g Perspectival approach to the Exemplar Project

A bush mechanic is able to view the exemplar project from various perspectives inc. hers, her critiques, various philosophical positions as well as historical and futurorical. In this sense a BM recognises the importance of being able to ‘situate’ their particular perspective on being via. their exemplar project.

Ref: EPTR1; EPTR2; EPTR3; EPTR5; EPTR7; EPTR11; EPTR12; MMC2.5

BMP 2 Social Holon Principle

The exemplar project is an example of a social holon.

Social and normative sustainability relates to this principle.

2.a Exemplar Project as task as a social holon

The exemplar project although it may manifest as a technological or organisational holon is actually seen by the BM as a social holon – homo mutualis – Arendt (1958). The BM practices holonomic or neg-entropic learning and enacts the integrative tendency of Koestler's (1978) social holon (SOHO – Self Organising Holon) meaning the bushie can speak in detail with all walks of life from workers to owners to designers etc. Furthermore a bushie has a holonomic grasp of the big picture while understanding its components in detail the obverse of a 'jack of all trades and master of none' really a 'knack for all trades (in the holon) and master of 'done'' and their interface. (see Holon below) All this has been built up over a praxis period of a decade.

As indicated above the Bush Mechanic is a Renaissance person and sees the exemplar project at essence not uniquely materialistic i.e. a technological endeavour but rather as ideational i.e. a socially, ethically and morally necessary social innovation. Bush Mechanics integrate life at the individual perspective then collaborate, integration is not from the group perspective rather it is as indicated around the individual as expressed through the exemplar project.

Evaluation: CBT, social organisation with compartmentalisation and specialisation works against this with every beat of (y)our hearts

Ref: EPTR1; EPTR2

2.b Moral Imperative

The key question behind the social holon is the desire to outwork an answer to the question 'how then should we live together?' This can be extended to 'how then should we live together today for a better tomorrow for our children?' This brings in the issues of integrity and ethics i.e. walk ones talk and walk our talk i.e., internal and external representations of the moral imperative. This simple question can be dissected for instance 'we' can be taken to mean sentient life which in turn is made up of organic and inorganic matter. Further concern for our children brings in futures generation considerations, while 'how' brings in the idea of citizen participation in establishing the issues/ethics we should act on/protect so we may live together which in turn derive from the global problematique and so forth.

In many regards, given the situation in the world today, the normative dimension of the social holon within which an Exemplar Project locates is the challenge of humanity. It is my firmly held believe that without solving this issue or even starting to address it we fail Gaia; we fail our children's tomorrow.

2.c Holonic approach to task

Attributes of such an approach are:

- a. Simultaneous whole and part eg. structure | agency; interface | node; collective | individual
- b. Self organising pg. 293
- c. Interface efficacious
- d. Uses fixed rules yet flexible strategies i.e. integrative algorithm's generating heuristic's for innovative, integrative, novel and creative outcomes pg. 293
- e. Open nested system SOHO Self Organising Open nested Hierarchical Order (not Stimulus - Response) pg. 289

- f. Janus face - laterally autonomous yet takes 'appropriate' orders from above and issues orders below pg. 311
- g. Creative and integrative neg entropic pg. 301
- h. Thrival not just survival
- i. Homo Mutualis not Homo Automaton pg. 301

Source: Koestler, A., *Janus - a summing up*. 1978, New York: Vintage. 300pgs.

2.d Social Holon and Social Innovation

Essentially the social holon principle indicates that the exemplar project is also one of social innovation – see 2.b(h) and Wildman (2002). In this sense the Social Holon is both status quo and innovatory always it is evolutionary such that a social innovation process and steady as she goes or status quo process are both inherent parts of just what a Social Holon is.

BMP 3. Collective Responsibility Principle – the Bush Mechanic as Global Citizen responding locally, proactively, concretely and collaboratively to the Global Problematique

The Bush Mechanic or Artificer sees her self as a Proto-Global citizen responding locally, concretely, participatively, anticipatively, and proactively with the above two attributes to global futures via. the global problematique by blending internal integrity and external ethics; metaconstitution eg. World Volunteer Service, redefinition of psychological markers such as income, status, time and task etc. The closest historical parallel to this type of combined vocational and consciousness raising that I have been able to find is the Workers Education Association (WEA).

In this sense the bushie sees the exemplar project as a living prototypical response to the question 'how then should we then live together?'

So this collective responsibility principle has the following dimensions:

3.a Charting the dimensions and facets of the global problematique

[techniques, approaches, examples and realities thereof]

3.b Capability to be participative and collaborative in doing this

and [ability to participate as a citizen in collaboration citizenship equivalent to the driving licence]

3.c Normative or moral awareness and capability

[recognising that the exemplar project should seek to respond to the key challenge from (1) above in the sense that 'given our differences, how can we, the worlds people, negotiate and generate a better world for our children's' children?]

Ecological sustainability relates to this principle.

Evaluation: least recognised

Ref: EPTR4; EPTR6; EPTR7;

BMP 4. Learning Principle - Learning, Yearning, Earning and Concerning from and with the above

Learning, Yearning and Earning from and with the exemplar project exemplar project (see above 3), through professionalism (often informal intuitive self taught learner/autodidact), intentionality, proactivity, innovation, mentoring, concerning for the bigger picture and others involved in the project etc., while allowing for the strange attractor and X factor.

4.a Spreading the Bushie Word

A bush mechanic is most concerned to share her wisdom as far as possible and this is done more by way of look-discuss-see learning at task apprenticeship during the development of an exemplar project than it is by classroom 'T'eaching of abstract cognitive theory and concepts. In this regard it is important for a Bushie to keep an action learning journal for learning insights both horizontal (more, broader and multi skills) and vertical understanding how the exemplar project fits with the big picture and vice versa and how interface systems, function and could be improved.

Ultimately this 720degree approach to learning may be seen as 'L'earning and as consciousness raising

4.b Consciousness Raising

One may argue that ultimately this is the most important attribute of this principle and this principle is the most important one of bushieness. In this sense one may argue that ultimately it is the quality of consciousness in the esoteric realm, which matters not ones actions that occur in the every day exoteric world. This is a vital, important and crucial point. A Bushie sees undertaking the exemplar project (and there will only be but a few in his life) a means for consciousness raising so it is by doing that the quality of ones thinking is enhanced – I do therefore I am.

4.c Holonomic Action Learning

In short this may be called Artificer Learning, Bush Mechanic Learning, Futuring, Anticipatory Action Learning, Holonomic Learning and in some ways harks back and yet transforms some elements of the Workers Education Association (WEA) learning philosophy of technical excellence (often attained in an action leaning mentored context) and capability of participating as a citizen (as contrasted with 'follow your bliss' of the 70's and 80's i.e. your bliss is your right!! This approach is more follow your responsibility). To this is added the holon concept from Koestler, global problematique and citizenship, and learning loop.

Here learning may be related to *creative evolveability* (ce) commonly called sustainability for this principle. Implicit in ce are the various dimensions of sustainability.

Evaluation: least successfully accomplished

Ref: EPTR8; EPRT9; EPRT10, EPTR12

- **NB:** This analysis is for Australia and its predominant euro derived western technocratic culture

Conclusion - Applying the above four principles to a revised forward looking definition of Bush Mechanic/Artificer

Towards a revised definition of Bush Mechanic/Artificer

Based on these four key outcomes of the Bush Mechanic/Artificer action research project we may now postulate a new definition of same.

A Bush Mechanic is someone who, over a period of years and with substantial effort, resources and commitment, and as part of their responsibility as world citizen, participatively and anticipatively conceives designs, establishes and learns from an exemplar project established on an integrated collective systems basis to artifice i.e. design, develop and demonstrate in particular way(s) today a better world for our children's children.

[PW No. 2 21-02; comm.15-02-2005]

In short *someone who acts ahead wisely* – in short a much needed member of any ‘do-ocracy’ - an embodied form of the word Prohairesis (choose ahead wisely) eg. global problematique (4th C Greek), with practical wisdom Phronesis – mechanic bit - and inclusive discourse Parrhesia – i.e. the social holon

Appendix A: ‘Next Step’ extensions of the concept of ‘Bush Mechanic’ esp. as master of interface

These extensions include using the following foundation principles of Bush Mechanicing/Artificer Learning to extend the concept in terms of gaining a glimpse of its possible relevance in broader vistas:

- a. Exemplar Project
- b. Social Holon
- c. Global Problematique
- d. Action Learning

Extending the Bush Mechanic Concept

- a. Sustainability
- b. Yin activism – as instanced by the bush mechanic
- c. Demarcation V’s Integration
- d. Post Job world - NeWork
- e. Community bushie - fight back – in times of severe economic downturn
- f. The UN and national sovereignty
- g. Disengaged consumers to enraged bushie citizenry
- h. Global Corps of bushies for peace

Objectifying interstice

- a. Feminist Theory
- b. Spectral Reserve
- c. Radar
- d. Spiritual interface

Critique of the Bush Mechanic perspective

Please note they are single ‘next step’ extensions in that they represent what may be seen as reasonable to be embedded in the bush mechanic principle directly derivable from the four principles above. In terms of ‘further steps’ based on more abstract conceptions of interface and esoteric matters these are not directly relatable to the grounded theory research project and as such are not included here. They do however point to a lacunae in our culture and are included FYI in the overview report.

.a Sustainability and the bush mechanic

Sustainability or as I prefer to call it creative evolvability, is to day a house hold term and the various dimensions of sustainability are listed below in the respective BM principle. In short one can argue that BM approach represents self reliance and as such it is not possible to have sustainability without a BM approach. It is not a separate issue.

.b Bush Mechanics as a for instance of Yin Activism

Furthermore such an embodied engaged approach can be applied to activism. Much activism is what may be called **yang activism** i.e. demonstrations or some form of interruption of the fabric of life e.g. terrorism and war – in short introjection i.e. destruction. An approach that builds the fabric of life however may well take a much longer time and be more involved and complex yet can produce substantial results. Such an approach may be called **yin activism**. Wildman (2002). The bush mechanic exemplar project can be an ideal representation of such an approach to activism. The four principles as detailed below help ensure the focus and process and content of the project can be seen as a form of Yin activism.

.c Demarcation and the unionist – integration and the bushie

In Australia unions, almost to a fault, have advocated demarcation i.e. no interface between traditional skill areas. So the plumber can't weld and carpenter can't paint – even for small jobs. Demarcation has been the bugbear of Australian industrial relations for generations. Since the mid 90's however multi-skilling and enterprise awards and now workplace agreements have come in, in order to seek to integrate an enterprise workforce from the enterprise basis not from the various skills in the workforce. A bushie approach is if anything deep multi-skilling with horizontal the plumber can do some welding and vertical the plumber can do some management and strategising perspectives. Demarcation is an anathema to a bushie.

.d Post Job World – NeWork and the Bushie

Today baby boomers and others seek to have greater control of their workstyle. As such many of us no longer wish to work full time rather wish a quality of life say based on a few days conventional work and balanced with family, friends, community service inc. bushie type activities etc. This is called **NeWork**.

.e Community Bushie

In time of severe economic downturns initiated by collapse in the American economy, ballooning deficits (Australia and abroad) a BM approach can, as did in the last great depression of the 1930's provide a **fight back option** for individual bushies acting collaboratively and communities using bushie principles. In times of economic downturn national and state Governments are of little use and community economies based on individual resiliency and collaboration e.g. bush mechanics will help carry the day. Wildman (2003).

.f From the United Nations to the United Bushies

The **United Nations** generally speaking is considered not to have succeeded by most bush mechanics. Likewise the foundation of the UN i.e. the Nation State and national sovereignty is seen as an anachronism today. The difficulty though is how to address such blockages without being swept away or simply ignored or worse. One response is for instance bush mechanics and artificing to generate exemplar projects wherein responses to these issues are demonstrably and practicably, though not perfectly, resolved.

.g From disengaged consumer citizenry to enraged bushie citizenry

Moving beyond technical skills and beyond artisan capabilities to artificer learning and moving beyond social skills to skills for an **engaged citizenry**, and today with the systemic failures in our social and governental systems one may say '**enraged citizenry**' and beyond to global citizen, bush mechanics learning or more technically 'artificer learning'.

.h Global corps of citizen bushies for peace

Synthesising the above one can propose a **global corps of citizen bushies for peace**. Mochelle and Wildman (2002). In any program to 'beat swords into ploughshares' that is serious will need to involve citizens and consequently to be effective could well embrace the bush mechanic philosophy writ to a community scale as explicated below.

Appendix B: Critique of the Bush Mechanic Perspective

This introduces some of the Achilles heel aspects of the bush mechanic. These are necessarily shortened to illustrate the issue/critique rather than explore them exhaustively, viz.:

.a Autodidact

As an autodidact a BM often lacks the perspectival approach to task and can 'own' the task obsessively.

.b Alternative approaches- need for perspective ability

Often a BM is **unaware of supporting and critiquing approaches/theories to their particular approach** to the exemplar project i.e. my way or the highway. And consequently the bushie may be unable to support in depth their own particular approach to for instance the exemplar project which as it is. In this sense bushies need, as indeed we all do, to develop a perspectival approach i.e. to be able to look at an issue from several perspectives.

.c Bushie as individualie not groupie

A BM's life is integrated at the individual rather than couple or group level means that the BM can seem aloof, hermetic/hermitic and attached to reality via things not people which, finally means they are not necessarily skilled at group processes such as engaging in co-operative or team efforts.

.d Bushies prefer Collaboration to Co-operation

BM's **co-operation is often more by way of semi autonomous** collaboration or mutual aid anarchism rather than 'T'eam work.

.e A Bushie can't easily fit in at school

Apprenticeship is challenging and conventional schooling impossible for an artisan let alone an artificer bushie. Believing in 'if you want a job done well do it yourself' it is difficult to have apprentices as her eyes and ears, furthermore if done formally this does not at all easily fit under the systems radar. A bushie is largely self managed and does not relate well to authoritarian school systems.

.f Bushies don't fit into Australia's IR or Training systems

Bushies are holonists not demarcationalists when it comes to skill areas. Modern manufacturing continues the process of specialisation, segmentation and demarcation this is an anathema to a bushie w.r.t. skills, organised labour and production.

In training bushies are intensely self managed and skilled as autodidacts they have learnt their expertise and interface skills in the face of necessity and personal challenge seldom in the hunt for formal qualifications or big dollars. Thus the formal TAFE system which builds on CBT and semi autonomous skill domains does not even interface between domains well let alone between skill categories. Thus from the self-taught, skill, experiential, non synthetic, non ingenuity developing approach and CBT arenas bushies are pushed further and further out into the periphery i.e. the bush metaphorically speaking where at least they have indigenous compatriots.

See – http://www.bushmechanics.com/pages/bush_mecanics/body_bm.htm
<http://www.abc.net.au/message/archive/bushmechanic/>
www.hotfutures.net.au/bushie

Incidentally I suspect that a bushie type temperament would make it difficult for a child to learn in the conventional schooling system as indicated in the previous point.

.g Learning needs to be externalised and in part formalised

BM's often do not have an explicitly articulated and practiced learning process, although they invariably have a strongly functioning internal one. This can mean difficulty when functioning as a mentor, for instance. In this regard bushies may need to have an education system that recognises their skills formally inc. some study in the sense of praxis not thinking and or doing but both braided as discussed in the four bushie principles.

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