

WSR

A Chinese Systems Approach

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Context and Sources

1976: Mao died ... 1978: an 'Emancipating the mind' discourse swept over China, 'Reform and Opening' started ... early 1980s: Deng Xiaoping returned to the centre of power ... 1987: 'Eliminating bourgeoisie spiritual contamination' campaigns reigned ... 1989: tanks rolled into Tiananmen ... 1992: Deng's 'Southern tour' revitalised the reform ... mid 1990s, Premier Zhu Rongji recentralised financial power ... 2001: General Secretary Jiang Zeming invited capitalists into the Party, China joined the WTO ... 2003: the Hu Jintao-Wen Jiabao leadership set out the 'scientific development, humorous society' vision ... 2008: China's stimulus package fired up the economy amid a Wall Street meltdown ... 2013: President Xi Jinping launched the 'China Dream' and 'Belt and Road' initiatives ...

These are exciting times during which China is transformed from an economic backwater into a super power while value complexity and information complexity post greater and greater challenges. It is within this dramatic context that the *Wuli-Shili-Renli* approach (hereafter WSR) emerged, evolved and stepped into an unknown future(s).

WSR is given birth by three key sources [1]. Firstly, reflecting on modern management experiences during Mao's time – experiences from success in making atomic bombs and military missiles to man-made famine that cost tens of millions of lives, an increasing number of Chinese came to recognise the limits of science-technology-(*wuli*)-alone 'systems approach', and subsequently embarked on exploring the human side of systems thinking. In 1978, Qian Xuesen, the architect of China's bomb and missile program, and Xu Guozhi, the pioneer of Systems Engineering and Operation Research (SE/OR) in China, promoted research on *shili* ('ways for engaging the world'); next, Li Yaozi, an American Chinese scientist, proposed paying attention to *renli* ('human motivations'); then, in 1988, Gu Jifa brought the *wuli, shili, renli* concepts together into training programs for official-managers.

Second, WSR in its current recognised form was shaped by intensive international encounters. Since the reform, foreign systems thinkers frequently taught or delivered seminars in China: Ackoff, Saaty, Linstone, Checkland, Mingers, Jackson, Flood, Midgley, Sawaragi, Nakamory, and on and on. Meanwhile, Chinese researchers studied abroad, exposing themselves to latest advances in systems research, particularly along the 'soft' and 'critical' frontiers. Among these, the over-15-years Beijing (China)-Ishikawa (Japan)-Hull (UK) cooperation project played a significant role in enabling the formal introduction and subsequent development of WSR as a multi-perspective, multi-methodology,

multi-discipline, multi-actor systems approach ([2,3], also see [4] for a China-US connection). Without these encounters, there would be no WSR as we know it today.

Last but not the least, the approach is informed by traditional Chinese thoughts, of which the most relevant insights include: differentiated wholeness ('*Tao* begets ten-thousand things'), dynamic complementarity (*yin-yang* opposites), complex emergence (*yi* – perpetuated changes), spontaneous creativity (*wu-wei* – non-forced doing), eight exemplary doings (*ba tiaomu* – eight wires), timely balance (*shi-zhong*), and the unity of knowledge and action (*zhi-xing heyi*) [1,5]. Along the evolution process of WSR, however, it becomes increasingly clear that 'traditional Chinese thought', as well as modern management practice, is no iron-casted thing to be picked up and applied, but different things to different people, continuously reconstructed and appropriated by various stakeholders in the bumpy reform context, a process in which interest, value, power and competence deeply involved. This generates tensions within the approach whilst opens up opportunities for reflection and conversation [6].

Wuli-Shili-Renli

Li (理) as a noun in Chinese denotes pattern, mechanism, principle, reason, and so forth, actual as well as virtual, such as texture in a piece of jade, methods of inquiry, norms of giving and receiving (note that the Chinese language does not differentiate between singular and plural forms of nouns, including *li*). Whilst as a verb *li* means to cope, organise, manage, and so on.

Wu (物) means things, objects, substance, 'the world' as distinctive from learning humans. Natural, man-made, material, and technological, *wu* manifest in various forms: natural endowment, available technology, financial resources, manpower and its educational structure, population and pollution, just to name a few. Then, *wuli* are mechanisms and regularities that determine the working and effects of *wu*. *Wu* can be friendly and enabling if we respect *wuli*, whilst brutal and punishing if we don't – of this Mao's 'Man shall certainly overcome Nature' romance and its embodiment the 'Great Leap Forward' provides us a costly footnote. Given the almost exclusive focus on moral teachings in Confucianism, on the one hand, and pervasive scientism since the 1910s 'New Cultural Movement', on the other, learning to respect *wuli* remains a daunting task in China. Nevertheless, 'Nature cannot be fooled', *wuli* govern the objective, material-technical sphere of human experience. Dealing with *wuli*, we rely on technical rationality.

Shi (事) means learning, doing, human's affair and engagement with the world, and accordingly *shili* denotes the styles, tendencies, habitus, or 'paradigms', that decision-makers adopt to see, to think, and to act. It is about ways of understanding phenomena, structuring problems, formulating and executing solutions. Chances are, participants involved in a decision believe in different versions of *shili*, due to differences in education, experience, and even personality; for example, Mao and Professor Ma Yinchu of Beijing University in the 1950s proposed different ways of engaging China's population. There appear, judged by action outcomes, good and not-so-good ways of engaging the world, and with innovative efforts there seems always opportunity for better ways. Such innovative efforts involve creating, comparing, acting upon, reflecting on and, if necessary, changing models of engagement, as well as the modeling of models. *Shili* therefore pertains to the subjective, mental-cognitive aspect of human experience. Dealing with *shili*, we act upon pragmatic rationality in search for reflexivity and creativity.

Ren (人) denotes people, human, humanity, and *renli* is about principles, structures and patterns of intersubjective relations. It concerns how humans should live together, i.e., the ideals and norms of social life, the position, role and responsibility one holds, how one is expected to behave and what one can expect, based on one's conduct, from others. Meanwhile, to a people (e.g., the Chinese) who 'have never been modern', a great challenge is learning to value, respect and actualise the self – individual persons. *Renli* is hence our 'lifeworld', 'habit of the heart', the realm of value and purpose, care and trust, personal interest and collective goodness, competing and compromising, etc. Caring for *renli*, decision-makers are obligated to ask questions such as: does the decision serve the genuine interests of concerned parties, of the wider community and the ecology, how to incorporate the values and viewpoints of stakeholders into decision models, agendas and choices, who should be involved, how to settle differences, and why. While *wuli* and *shili* concern the 'what' and 'how' of decision-making, *renli* stress 'to what end?'. *Renli* thus highlights the moral, normative-evaluative sphere of human life. Dealing with *renli*, we follow value rationality in search for social legitimacy and harmony.

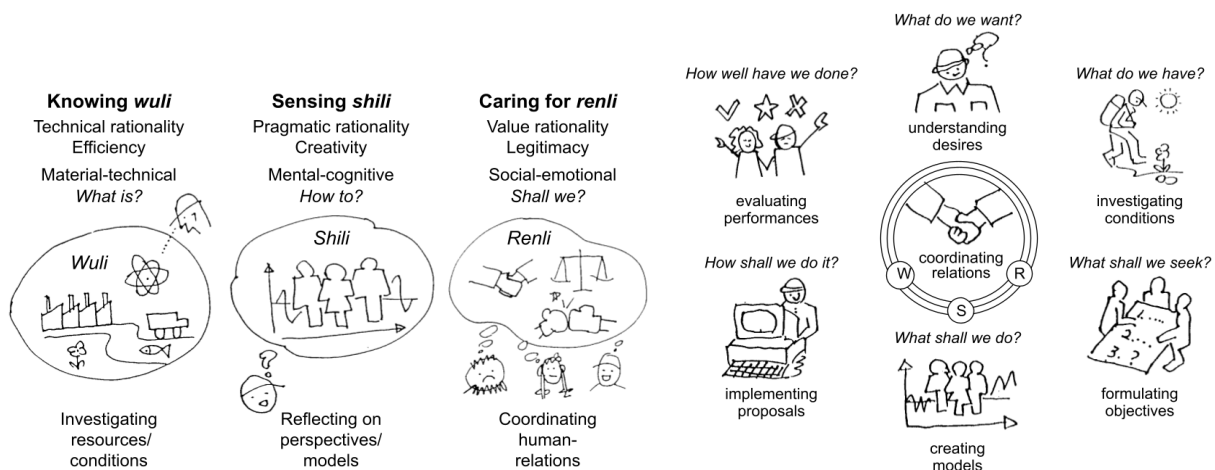
WSR contends that there are different *li* as elements, perspectives and human relations influencing the process and outcome of decision-making. Those *li*, objective, subjective, and intersubjective, are at once differentiated and interconnected. On the one hand, issues pertaining to one *li* cannot be properly understood in the terms merely of other *li*; therefore, decision-makers should deploy different means to investigate differentiated *li* – against reductionism. On the other, like *yin* and *yang*, various *li* are inherently interwoven; therefore, *li* cannot be handled in closure – against isolationism. 'Isolated from *xingli*/[*renli*]', the Song scholar Zhu Xi (1130-1200) instructed, 'the *li* of *shishi* and *wuwu* have no practical significance.' Of this, Mao once again set us stark reminders: before the 'Great Leap Forward' Mao launched the 'Anti-Rightist' campaign so as to silent dissidents, and to settle the population debate he simply packed Professor Ma into prison – both ended in disasters. Learning from history, WSR calls for knowing *wuli*, sensing *shili* and caring for *renli* [2,3]. The simple call has ontological, epistemological and methodological implications [4].

To begin with, WSR suggests that empirical reality, or 'the human condition', be seen as a dynamic constellation of multiple *li*: *wuli* (relation with the world), *shili* (relation with the mind), and *renli* (relation with others). *Li* taken as such are conceptually differentiated, logically irreducible, whilst empirically intermingling. There is no fixed hierarchy for ranking *wuli-shili-renli* since *li* continuously invite, transform and penetrate into each other in emerging ways due to human action. Such a multi-*li* 'folk metaphysics', or 'order of chaos', is meant to be a tentative model of this-worldly experience based on which investigating and deliberating empirical challenges can start, e.g., asking questions such as 'What *wuli-shili-renli* matters have been, and should be, involved in making this here-and-now specific decision?'.

What follows is that no single *li* alone is sufficient for knowing the multi-*li* reality. Individually, each *li* supplies only a limited viewpoint, a partial presentation. Only collectively can *li* enable us to generate knowledge sufficiently rich for handling the multi-*li* reality. Hence, what is useful is not *wuli*, *shili* or *renli* knowledge on their own, but the complementary effects between them. This demands sweeping-in and balancing multi-*li* lenses, or 'inquiry systems'. The challenge is that there is no once-and-forever formula for sweeping-in and balancing acts. As multi-*li* reality continuously changes, situated multi-*li* knowledge has to be continuously sought and knowledge claims continuously examined. To the Chinese

sage-masters, furthermore, knowledge exists when it is acted upon, and the value of knowledge lies in its capacity in helping actors to make a positive difference.

There is a methodology guideline in WSR. For pedagogical purposes, the guideline proposes a set of action elements, namely: understanding desires, investigating conditions, formulating objectives, creating models, implementing proposals, evaluating performance, and coordinating relations. Elements are not stages or phases – there is no fixed order for WSR actions. This is because *li* tend to influence decision-making in unpredictable ways: where, when and how *wuli*, *shili*, *renli* issues will emerge is highly uncertain. Hence, decision-makers had better prepare to handle multiple *li* in parallel; should *li* happen to ‘dominate’ in sequence, that would be special cases. Here, design thinking goes hand-in-hand with non-linear complexity. In early years, a ‘bubble management’ metaphor was used to indicate the uncertainty in decision-making [1], recently the Confucian teaching ‘timely balance (*shi-zhong*)’ is referred to for that purpose [7]. A logical inference is that each problem situation is, ‘in principle’, unique, demanding a unique methodology, or unique combination of methods, to improve it. Another inference: participants’ creativity and skill in dealing with methods, not the methods *per se*, is key. This moves decision-making beyond the ‘soft methods structuring problem first, hard methods then solving it’ (or ‘from qualitative to quantitative’) conventional wisdom [4]. Furthermore, an ‘approach’ is more than a methodology. Whether the WSR methodology is called for, or the WSR philosophy is sufficiently useful, should be determined by situated problems or tasks at hand. Don’t put the cart before the horse [7].



WSR in Practice

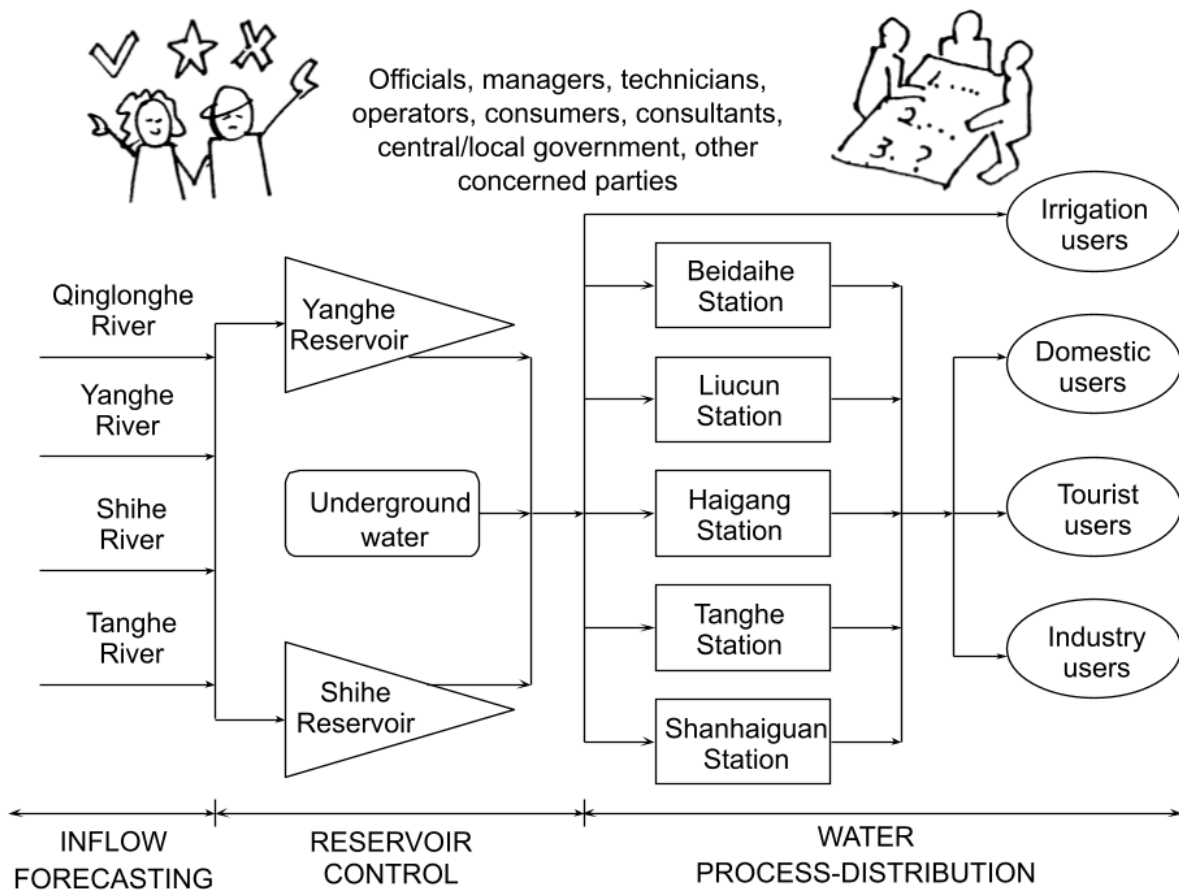
WSR as a project-based methodology

WSR has been used to guide formal management projects – started with funding application, assigned with specific task and time-span, and ended with completion report and official evaluation. Presented below is such a project – developing a water resources decision support system for a seaport city in northern China (This case is based on [1,8]).

As the number of sightseeing visitors increased thanks to improved living standards and the city's rich tourist resources, water shortage became serious in recent years. To solve the problem, the government invested heavily in constructing tunnels to divert-in water from nearby areas, but the newly established Water-Diverting Management Bureau found it difficult to fulfil its duty – managing the expanded water demand and supply. Considering the complexity therein and the lack of expertise on the part of Bureau staff, the local government sought assistance from experts; hence the intervention of a group of systems scientists – let us call them the WSR team.

The WSR team started with 'understanding desires', only to find water user groups unable to express coherently their demands, Bureau staff impatient to understand the users' difficulties, while city officials yet to articulate their objectives. In this circumstance, the WSR team engaged the concerned parties in 'investigating conditions' via interviews, stakeholder discussions and on-site surveys. Gradually, a preliminary *wuli-shili-renli* picture emerged. In terms of *wuli*, available water came from rivers, tunnels, reservoirs and underground, all influenced heavily by seasonal patterns; also related were the capacity of five water processing stations. As to *shili*, reservoir staff stressed maintaining water storage level, station operators wanted stable processing workload, Bureau managers favored allocating water according to market signal, user groups emphasized 'fair' distribution, while city authorities requested balancing economic, social and environmental considerations. Regarding *renli* of that time, a win-lose mentality reigned, which manifested most apparently between user groups: each group, industrial, agricultural, domestic, tourist, all claimed that its demand should be the priority.

Taking advantage of its 'neutral outsider' position, the WSR team brought concerned parties into back-and-forth, face-to-face discussion, focusing on the questions 'what do we want?', 'what do we have?' and 'what shall we seek?'. Gradually, a set of related objectives in terms of 'what to do?' were agreed upon: (1) forecasting inflows (rivers and tunnels), (2) stabilising water storage (reservoirs), (3) adjusting processing workload (water stations), and (4) sharing water supplies based on consumption patterns (see Figure 3).



Along the way, concern parties were able, probably the first time, to sit down together, understand each other's circumstances, ask for clarifications, put oneself on others' shoes, fit one's own demand realistically into the overall big picture, seek compromises and raise suggestions for good-enough, win-win outcomes. Rivals still were, they became willing to make 'the system' work, considered themselves the owners of the system, and were excited to see the possibility of solving the problems by their own efforts.

During the process, various methods and tools were introduced and used: user groups and officials preferred rich pictures and cognitive mapping, whilst operators and engineers were keen on critical path analysis and input-output tables. To the WSR team, methods and tools are fishing rods, not the fish. As long as users feel confident to express their ideas, they could choose whatever means they felt comfortable with.

Challenges lie ahead. When it came to 'creating models' and 'implementing proposals', it emerged that 'the system' had to deal with missing hydrological data and to sort out various *wuli* technical details such as latest simulation software and ICT interfaces, to integrate multi-disciplinary *shili* knowledge – hydrology, operational research, ecological economics, organisation behaviour, etc., and to handle *renli* interpersonal relations between and within government agencies, user groups, equipment vendors, and

even WSR team members from different academic institutions. Indeed, ‘coordinating relations’ was found underlying each and all WSR action elements.

In the end, the project went through several rounds of evaluation organized by government agencies as well as academic bodies, and received a ‘Scientific and Technological Progress Award’, enabling the expert team members to publish journal papers which strengthened their academic credentials. Most important of all, the resulting system proved viable when it supplied water smoothly to user groups over the severe droughts in the immediate following years.

WSR as a learning device

To ordinary managers, officials and researchers, the chances of doing ‘formal projects’ are rare. Instead, most of the time ordinary actors immerse in ‘informal coping’ – day-in-day-out handling their going concerns, e.g., understanding social-economic changes, improving business strategy, constructing management theories. To informal coping, the WSR philosophy as a learning device (disseminated via MBA programs, corporate training and professional publications) proves more effective than WSR as a formal, project-based methodology. Below are representative examples.

Case 1: ‘Reform without a theory’

It is nowadays widely acknowledged that China’s post-1978 reform, especially in the early years, is one ‘without a theory’. The question is why a no-theory ‘strategy’ was ‘selected’ by the Chinese elite, ‘accepted’ by the Chinese people and ‘worked’ in the Chinese context. Seen through WSR, the answer lies in a set of time-and-space specific *wuli-shili-renli* that actors skillfully exploited for pursuing sectional interests (This case is based on [9]).

To begin with, the reform started with considerable *wuli* ‘advantage of backwardness’. Mao’s grand socialist experiment left the country with an imbalanced economy and persistent shortage of basic necessities; in the eve of the reform, the economy was ‘at the edge of collapse’. This produced enormous hardship to the Chinese people, but also a huge seller’s market and ‘costless abandonability’ – whatever to replace the command economy, be it a planned or a market or a hybrid one, the only way was up. Mao’s economic decentralization and ‘Five-Small’ rural industrial policy also left positive legacies, for example entrepreneurial talent in starting and managing ‘commune-brigade enterprises’. Significant, too, was China’s natural (man-made?) endowment – abundant low-cost, skilled labour hungry for a better life.

As to *shili*, the Chinese are well-known, or stereotyped as such, for their ‘anti-abstraction bias’, ‘ambiguity tolerance’ and ‘uncertainty acceptance’. It is a ‘pragmatic culture’ wherein ‘action without theory’ is a virtue, not inability. Deng’s trademark ‘white cat, black cat’ metaphor is representative, according to which action should ‘not [be] based on a certain existing doctrine or theory, but rather on consideration of actual national conditions and state interest’. This is a ‘virtue over truth’, ‘practicality over speculation’ way of life that allows, indeed induces, experimentation and creativity, which in the early reform years gave birth to, among others, two ‘miracles’: Household Farming and TVE – both with persistently ambiguous, unstable property rights though, the former increased total agriculture output by

one third in just a few years while the latter became the powerhouse of an unprecedented economic boom for over a decade.

Regarding *renli*, the Chinese distrust public institutions: ‘The mountain is high and the emperor is far away’, ‘policies from above, maneuvers from below’. And they distrust strangers, too, building and living in *chaxu geju* (self-centred, expanding, differentiated *guanxi* circles). In the economic realm, this resulted in ‘network capitalism’ wherein personal connections were commodified while officialdom-business relation became highly obscure and unpredictable, a heaven for those well-positioned for it whereas a minefield for others. As a manifestation, FDI from overseas Chinese networks persistently outweighed those from ‘the West’, reinforced a peculiar ‘mode of production’ of short-term orientation, thin labour protection and low environmental standards, and further complicated China’s bureaucrat-business relations. Meanwhile, driven by strong achievement-orientation, lubricated by *guanxi* practice and benefited from ‘benign neglect from above’, private businesses rapidly grew, outperformed SOEs and propelled the whole economy.

<i>Wuli</i> *	<i>Shili</i>	<i>Renli</i>
Command-economy legacies	Intensive pragmatic mindscape	Pervasive <i>guanxi</i> practice
Imbalanced economic structure	Anti-abstraction bias	Distrust toward public institutions
Shortage of basic living necessities	Ambiguity tolerance	Tacit rules
Low commercialization	Uncertainty acceptance	Commodified personal connections
Lack of welfare protection to, particularly, farmers	‘The mountain is high and the emperor is far away’	Officialdom-business relationship – Chinese style
Costless abandonability	Virtue over truth	Commercial virtue
Massive seller’s market	Confucius: ‘No four devils’	Utilitarianistic familism
Economic decentralization	Deng: ‘river, stones’, ‘white cat, black cat’ instructions	Utilitarianistic reciprocity
‘Five small’ industrial legacy	<i>Shizhong</i> : pragmatism upon time	<i>Chaxu geju</i> (self-centred, expanding <i>guanxi</i> circles)
Entrepreneurial talent	Achievement orientation	‘Benign neglect from ‘above’
Low-cost, skilled labour		
Positive effect:	Positive effect:	Positive effect:
Huge growth opportunities and considerable legacy endowment	Fuzzy, unstable property rights propelling HF and TVE	Non-state sector booming despite state discrimination

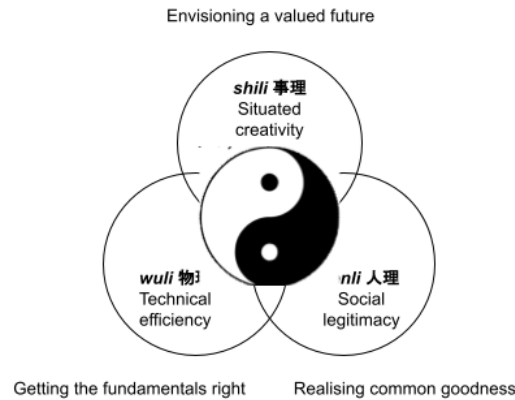
* Here, the notion of *wu* is extended to include intuitional legacy makeups in that, once in place, their thing-like qualities and effects are not ‘up to us’; these *wu*, too, as resources/constraints condition human actions.

** This table is modified from Zhu 2007, p. 1512.

Standing alone, each of the *wuli*, *shili*, *renli* factors could well be obstructive. Working together at that specific historical moment, however, they led to favourable outcomes. To some commentators in ‘the West’, economic logic is always in conflict with ‘competing logics’, namely logic of religion, profession, or family. In the China case, we see that economic logic, mental universe, social configuration and entrepreneurial creativity complemented each other in enabling reforms – reforms with no theorised destination nor articulated plans.

Case 2: Enterprise strategy: generating value efficiently, creatively, legitimately

What to do in strategy-making, and how to do it? WSR would suggest that it is about generating value efficiently, creatively and legitimately, which is to be achieved by getting the fundamentals right, envisioning a valued future, and realising common goodness (This case is based on [7], Chapters 5 and 6).



In the business context, ‘fundamentals’ can be taken to include science and technology (e.g., the internet), economic laws (e.g., economies of scale, scope and speed), regulative regimes and institutional legacies (e.g., the ‘little-emperor market’ due to China’s one-family-one-child policy). Getting the ‘numbers’ right, firms will do well, whereas ignoring them amounts to suicide. A challenge is that *wuli* fundamentals, objective and emotionless though, can be firm-specific (an international trade war impacts more on a trading firm than on a local snack stall, for example), or even strategy-specific – they might favour one business model over another (think of how the internet benefited Dell’s direct-sale model much more than IBM’s sales-force one).

‘A change in perception does not alter facts. It changes their meaning ... opens up big innovation opportunities’, Peter Drucker famously wrote. Muhammad Yunus of the Grameen Bank is an exemplar here – he envisioned a world-without-poverty and pioneered microfinance to help millions of poorest female farmers stand on their own feet. Here is the *shili* realm of creativity, innovation, ‘intelligently making-do’ and ‘blue oceans’, as well as ‘organisational memories’, ‘industry recipes’, ‘dominant logics’, ‘core rigidities’ and ‘competence traps’ – Yunus created a massive new market without relying on new technology, whilst Kodak and Polaroid failed to capture the digital camera market despite the most advanced digital technology in their own hands. Hence, important is ‘situated creativity’ that links firm-specific resources with unfolding fundamentals.

Enron and Lehman Bros. were extremely creative: they thought, and acted, ‘out of the box’, yet only to destroy values of the firms, of investors and society. The lesson is that creativity must be matched with collective purpose. Along this *renli* dimension, easy to do is obeying the law and giving out profits like a charity; but the former is merely the bottom line whilst the latter not a wise way because both assume a trade-off logic. Instead, strategy excellence lies in designing the common good into products or services so as to benefit the firm, the consumer and society. Nintendo is an exemplar: its Wii machine induces consumers to get out from the sofa, play together with family and friends, and the outcomes are

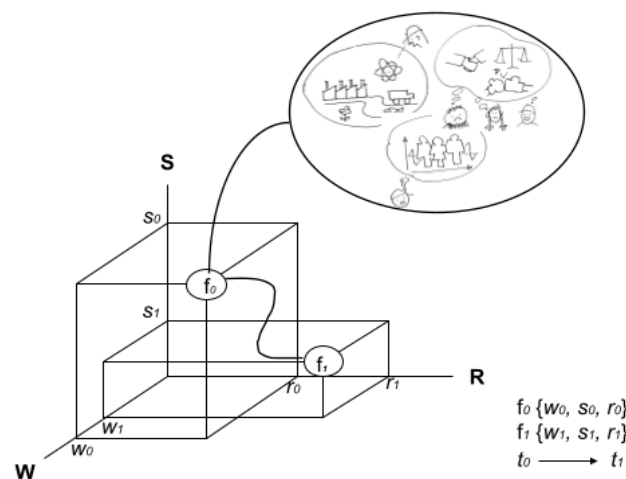
enormous: big profit to the firm, healthier and happier consumers, more tax revenue and less healthcare burden to society. Yes, getting the fundamentals right, envisioning a valued future and striving for common goodness, we can do it.

Case 3: Exploring a WSR theory of the firm

What are firms, how do firms differ from markets and from each other, and why do some firms do well while others struggle – these are fundamental questions in ‘the theory of the firm’ (This case is extended from [7], Chapter 7). Ronald Coase’s path-breaking work pioneered this important field of study, yet his transaction cost theorizing focuses sharply, and narrowly, on ‘how firms differ from markets’ while ignores ‘how to run a business’, and his analysis relies almost exclusively on marginal efficiency – rather limited to the firm as a multi-facet, agentic, evolving social institution.

After Coase, the theory of the firm has been deepened and enriched by contributions from the social sciences, which can be clustered around a set of important themes: (1) information-incentives-contracts, (2) resources-capability-specialisation, (3) subjectivity-innovation-evolution, (4) value-purpose-agency, (5) authority-power-politics, (6) market-state-society, (7) modernisation-development-transition, and (8) complexity-emergence-autopoiesis. Rigorous and stimulating as they are, the field still lacks an overarching framework to bring together these wide-ranged contributions. Many trees have emerged, not yet a forest. It is to fill the gap that WSR possesses great potential.

Seen through WSR, the firm embodies a constellation of unique *wuli* assets, *shili* capabilities and *renli* relationships evolving in a wider WSR space. At any point in time, each WSR constellation constitutes a unique position in the WSR space. Due to path-dependence effects, there are no duplicated WSR positions, hence no identical firms. As the WSR space consists of an infinite number of possible positions, there is no limit for entrepreneurs to create new, valued going concerns.



A firm differs not only from other firms, but also from its own past. As time passes, say from t_0 to t_1 , the ‘same’ firm transforms from f_0 to f_1 . Since the WSR space is in a constant flux, the firm is continuously evolving – adapting or dying. As firms become more interdependent, they access to each other’s assets-capabilities-relationships via ‘hybrid’ arrangements such as joint-venture and strategic alliance. As

a result, the boundaries of ‘the firm’ are blurring and theorising of the firm has to shift from firm-centric to connection-oriented.

In such a conceptualisation, at the heart of ‘why the firm exist’ lies ‘organisation advantage’, or ‘justification efficiency’, that the firm takes on long-term projects which markets would not do, and it is the firm’s, in fact manager’s, job to create and capture value by orchestrating unique *wuli* assets with technical rationality, *shili* capabilities with pragmatic rationality, and *renli* relationships with value rationality, within and beyond the firm, in a situated, timely-balance fashion. Such WSR overarching theorising is not to replace existing contributions, but to enhance their value by bringing forth their complementarity.

Tension, Reflection and Prospect

With formal-project as well as informal-coping applications, within a generation’s time WSR has gained considerable recognition, incorporated into MS/OR textbooks, appearing in the *Science* magazine. It is not always clear, however, what the approach is for as well as in what direction it should be developed. For drawing attention to this matter, Table x.2 contrasts two ideal types of WSR.

	‘Hard’ WSR	‘Soft’ WSR
<i>Positioning WSR</i>	A fine-tuned multi-criteria decision-making device for SE/OR experts to get jobs done	A multi-perspective, multi-method, multi-actor, general-purpose management approach
<i>Accountability</i>	Accountable to authority/business sponsors	Accountable to stakeholders, particularly those being affected
<i>What to incorporate and integrate?</i>	Expert knowledge from different disciplines; quantitative and qualitative methods; human and machine	<i>Wuli</i> fundamentals, <i>shili</i> creativity and <i>renli</i> human relations, particularly the interests, values, expectations of stakeholders
<i>The role of non-expert stakeholders</i>	The object to be studied, managed and cared for	Owner and participant of decision-making process
<i>Core task in caring for renli</i>	Navigating the human relations minefield so as to get jobs done	Raising ethical-moral sensitivity, asking ‘to what end?’
<i>Scientific vs humanistic means?</i>	‘From qualitative to quantitative’: in the end, all human problems and solutions must be presented in numbers and charts on the screen	Against reductionism and paradigm hegemony: value rationality has to be handled by situated observation, participation and interaction
<i>The functionality of SE/OR</i>	Natural science alone handles <i>wuli</i> , SE/OR as non-differentiated discipline of applied mathematics is the foundation of <i>shili</i> -ology	SE/OR techniques (<i>qua</i> technical rationality) for handling <i>wuli</i> ; SE/OR approach (<i>qua</i> pragmatic rationality) for coping with <i>shili</i>
<i>Key resources</i>	Database, model-base, method-base, knowledge-base; hardware, software, group-ware, harmony-ware, people-ware, heart-ware ...	Participants’ experience, skill and creativity in setting agendas and selecting, combining, inventing decision-making means

Following Max Weber, setting up ideal types is not meant to fit existing undertakings, let alone specific researchers, into the boxes – ideal types do not exist in reality. Instead, by comparing on-going research and application with ideal types, we intend to open up opportunities for overcoming muddling, surfacing tension, encouraging clarification and facilitating deliberation that would better serve the systems/management community.

Experience so far shows that the ups-and-downs between the two versions of WSR largely paralleled China's bumpy reform path as well as changes in the political-ideological environment – the 'soft' WSR spirit shone brightly during the reform years under Deng Xiaoping, whilst in the era of 'China model' and 'top-level design', we see more 'hard' WSR elements. If past experience has any indication value, it looks likely that the fate of WSR will continue to couple with China's. This is, in this author's view, not a bad thing.

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