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Pacing Changes, Appreciating Approaches to Systems and Designing

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Designers engaging in initiatives aspiring towards “systems changes" may be challenged to define what that entails. What distinguishes a "change" from "systems changes"? Under stable conditions where minor fluctuations from an equilibrium are expected, systems typically absorb irregularities without altering their fundamental nature or identity. In turbulent fields where disorder prevails, systems may be transformed as adaptations and developments unfold.

(Re-)designing can be grounded in paradigms drawn from Social Theory, and/or General Systems Theory. Depending on context, certain systems approaches may prove more suitable than others. Efforts to identify a universal “one best way” towards solving (or dissolving) problems (or problematic messes) are likely to lead to disappointment. In the evolution of the systems movement since the 1950s, design thinking and transdisciplinary stances have gained prominence. Contemporary mindsets increasingly embrace pluralistic perspectives, drawing from postmodern thought and non-Western philosophies.

Through a multiparadigm inquiry, well-established mainstream systems perspectives from the 20th century are reviewed. Since 2019, the Systems Changes Learning Circle in Toronto has been rethinking systems thinking, shifting the focus from stability to navigating constant change. Along that continuum, nine approaches to systems and designing are presented as a non-exhaustive list. At the head of the list are system approaches emphasizing (re)converging towards equilibria. Towards the tail of the list are systems approaches where sequencing is more important.

To 2025, our research on systems changes has elevated the primacy of temporality and rhythms based on sound philosophical and theoretical foundations. The pursuit of better metaphors continues, towards improving conceptual alignment on systems changes. Further progressing *Pacing Changes* methods focuses on shortening the learning curve for novices, by developing templates and techniques that support contextual learning and guide progression toward mastery.

KEYWORDS: systemic design, systems thinking, systems change, methodology, systems theory, philosophy.

RSD TOPIC(S): Learning & Education, Methods & Methodology, Socioecological Design

1.0 Introduction: Are systems designed for changes, or with changes?

What is the difference between a change *in* a system, and *systems changes*? An aspiration for systemic change often signals something broader or deeper than everyday change. One way of pre-empting debate on the meaning of "systems change" has been to leave the term undefined (Birney & Riddell, 2018). This can confuse interpretations of what counts as "systems change", and what doesn't.

The plural form "systems change" does reflect that more than one system is involved. With greater plurality, a label of "systems changes" recognizes not only that multiple changes may occur sequentially or in a complex, but also that there may be changes beyond those intended in purposive interventions.

Since 2019, the Systems Changes Learning Circle has explored ways that elevating changes may influence rethinking systems thinking (Ing, 2022). Now in its 7th year of an espoused 10-year journey, practices of designing systems may be more rigorously linked with their underlying theories (Ing, 2023). Our approach honours a philosophical lineage on systems based on American pragmatism, extended with perspectives on Classical Chinese science from the School of Naturalists of the Warring States period circa 475 to 223 BCE (Ing & Metcalf, 2023).

Section 2 reviews the legacy of systems thinkers, drawing attention to traditions in Social Systems Theory and General Systems Theory. Section 3 outlines nine approaches

to “systems changes” that designers can use to reframe initiatives at hand. Section 4 reorients systems changes from *what+why* (synchronic grounding) to *when+where* (diachronic grounding). Section 5 introduces Pacing Changes methods as a shift from designing *for* change, towards designing *with* change.

2.0 Method: Multiparadigm Inquiry on Social Systems Theory and General Systems Theory

A multiparadigm approach can be employed to explore the variety of ways of thinking about systems and designing. Rather than promoting one “correct” method, multiple traditions are considered that enable designers to select an approach that fits the context.

The scope of a design initiatives is defined through specification of the systems(s) of interest. Is the primary interest for designing a technology (e.g. smartphone device, as hardware and/or software)? Or just human systems (e.g. communications, psychology and/or sociology)? Perhaps a coordination of socio-technical systems (e.g. work organization complemented by machines)? Does the scope include the natural world (potentially exceeding planetary resource boundaries in the Anthropocene), across living systems (animals, plants) and manmade artifacts?

Traditions from the 20th century are well covered in a book edited by Open University professors, looking at 30 systems thinkers, grouped into seven categories: (i) early cybernetics, (ii) general systems theory, (iii) system dynamics, (iv) soft and critical systems, (v) later cybernetics, (vi) complexity theory, and (vii) learning systems (Ramage & Shipp, 2009, 2020). The Systems Changes Learning Circle has centered on (a) social systems theory (in the categories of (iv) soft and critical systems, and (vii) learning systems), and (b) general systems theory (i.e. category ii). These two theoretical traditions developed jointly in the Society for General Systems Research, founded in 1954 and renamed as the International Society for the Systems Sciences in 1988. A broader inquiry might take on all seven categories. Implicit or explicit choices associated with designing are compared through multiparadigm inquiry (Gioia & Pitre, 1990). In particular, *multiparadigm interplay* that enables one theoretical lineage to learn from another is less ambitious than *multiparadigm synthesis* (Lewis & Kelemen, 2002).

Social System Theory focuses on human systems, mainly through psychological and sociological perspectives. An important framework on sociological paradigms theorizes along two dimensions: (i) order vs. conflict; and (ii) regulation vs. radical change. This results in four sociological paradigms, of (i) functionalist, (ii) interpretivist, (iii) radical humanist, and (iv) radical structuralist (Burrell & Morgan, 1979; Goles & Hirschheim, 2000). Building on this foundation, problem-solving methodologies were classified along two dimensions into a six-cell matrix: (a) systems as (i) mechanical or (ii) systemic; and (b) participation as (i) unitary, (ii) pluralist, or (iii) coercive (Jackson, 1991). More recently, Critical Systems Theory has expanded to cover a broader range of systems sciences, into systems practices (Jackson, 2019).

General Systems Theory aims for a unity of science across disciplines (e.g. physics, chemistry, biology, sociology, etc.). Ludwig von Bertalanffy is recognized as a godfather in this movement (Drack, 2009; Hammond, 2019; von Bertalanffy, 1950). Careful research sees this quest not as a "theory of everything", but as a "skeleton of science" (Boulding, 1956). The Society for General Systems Research was founded with a purpose "to encourage the development of theoretical systems which are applicable to more than one of the traditional departments of knowledge".

A paperback titled *Systems Thinking: Selected Readings* (Emery, 1969) packaged excerpts foundational to systems theories as chapters. An important and under-appreciated work on World Hypotheses by Stephen C. Pepper was explicitly footnoted as omitted. Root Metaphor Theory (Berry, 1984; Harrell, 2004; Pepper, 1942) deepens insights through a philosophy of science rooted in American pragmatism. A World Hypotheses approach clarifies approaches to systems thinking, and provides a base for metaphilosophizing.

3.0 Systems Approaches as based on a variety of foundations

Much of mainstream systems thinking is anchored in 20th century work. Phenomena such as the Internet and the Anthropocene have encouraged a rethinking of the foundations of system thinking itself (Ing, 2013). Under a premise that most espoused systems professionals are interested in systems only to the extent that they change, a range of systems approaches can be developed. Nine systems approaches follow,

covering primarily the trajectory from Social Systems Theory and General Systems Theory. This list includes:

- 1. Structural changes, (re)designing part-part relations, as reforming;
- 2. Functional changes, (re)designing part-whole relations, as transforming;
- 3. Behavioural changes, (re)designing interactions of a whole to events;
- 4. Ecological changes, (re)designing whole-whole relations, as shifting regimes;
- 5. Processual changes, (re)designing sequences;
- 6. Textural changes, (re)designing weaves in time;
- 7. Rhythmic changes, (re)designing cyclical oscillations;
- 8. Polyrhythmic changes, (re)designing synchronic tempo;
- 9. (Con)textural-dyadic changes, (re)designing diachronic pacing.

The list of approaches is neither exhaustive nor mutually exclusive, so circumstances might see more than one at play. Towards the head of the list are approaches more concerned with form and stability. Towards the tail of the list are approaches more concerned with temporality and change. Designers can frame their systems changes to one or more of the listed approaches.

3.1 Structural Changes: (re)designing part-part relations, as reforming

Structure is an arrangement in space (Gharajedaghi, 2011; Ing, 2013). In a mobile telecommunications system, for example, replacing a mobile phone device or a network switch involves a structural restoration or upgrade.

A completely modular design enables replacing a part with a copy or replica of the original. The behaviour of the whole does not necessarily change. Multiple parts might be clustered as an assembly, serving as a subsystem that can replaced, while the whole retains its features and properties. That act of taking the whole into parts, making changes, and reassembling into a whole, is *reforming*.

3.2 Functional Changes: (re)designing part-whole relations, as transforming

Function is the contribution of a part to a whole (Gharajedaghi, 2011; Ing, 2013). The word “function” is used generally, with “role” more common when referring to social

relations. In a mobile telecommunications system example, replacing a landline with smartphone extends voice functionality with text and image interactivity.

Redesigning the contribution of one or more parts may or may not change the whole. Early releases of a technology are often "over-engineered", with subsequent versions rationalized to redistribute primary contributions from some parts to others. Human systems are composed of individuals who can serve multiple functions, with greater or lesser degrees of expertise. Roles on a team redesigned with individuals switching responsibilities may merely represent reforming, with the whole continuing to serve the same function(s). Roles redesigned with effect that alters functionality (positively or negatively) of the whole are *transforming*.

3.3 Behavioural Changes: (re)designing interactions of a whole to events

Behaviours include (i) reactions, as system events deterministically caused by another event; (ii) responses, as system events for which the system itself is a coproducer; and (iii) acts, as self-determined autonomous changes (Ackoff, 1971).

Redesigning *reactive* systems involves increasing or reducing the set of alternatives to changes in the world. In a mobile telecommunication system, enabling or disabling voicemail or call screening features expands the set of results automated when a connection is initiated.

Redesigning *responsive* systems involves a greater appreciation of conditions. An interactive voice response system may start with "how can I help you", leading to a tree of alternative paths, with the intelligence to break out to a human agent when the situation is assessed as too complicated.

Redesigning *autonomous* systems should readily handle "most probable" situations, with concerns about control with edge cases. For autonomous vehicles, the trolley problem is well known: choosing between (i) altering course to avoid multiple persons endangered on the current path, against (ii) imperilling a single bystander. Animate creatures are autonomous, and may or may not appreciate training or being tamed.

The ability to design *behavioural* changes is often approached with a goal orientation, examining reasons for reactions, responses and acts. In social organizations,

individuals may or may not be motivated to concur with the direction of an organizational whole, at the risk of separation or ostracization.

3.4 Ecological Changes: (re)designing whole-whole relations, as shifting regimes

Ecological thinking arose in the 1970s as a counterpart to behavioural thinking, largely in association with the theory of affordances (Gibson, 1979). While a behavioural approach to psychology takes a perspective of "what's inside your head", an ecological approach asks "what your head is inside of" (Mace, 1977). More broadly, an ecological epistemology in systems approaches was posthumously credited to Gregory Bateson (Carvalho, 2016; Harries-Jones, 1995). Organizations facing rapid changes in transnational economies reoriented their attention less on socio-technical systems concerns, and more towards socio-ecological systems issues (Emery & Trist, 1973).

Ecological changes are reflected in the relations of wholes with wholes. In studying the perceptions of military pilots landing on aircraft carriers, a behavioural approach looking inwardly into the mind was insufficient. A successful landing relied on the judgement of the pilot looking outwardly onto the aircraft moving forward, with the ship yawing, pitching and rolling on the open seas.

Wholes live in scales both larger and smaller. Wholes may be typed in hierarchies (Ahl & Allen, 1996; Allen, 2008; Allen et al., 1984/2018). Rates of change can be described as layers (Brand, 1994; Brand & Runice, 1997).

Regime shifts have become a focus for flips in stable states in natural ecosystems (Folke et al., 2004; Rocha et al., 2015). A clear water lake with a thriving fish population that becomes flooded with pollutants can settle into an algae-dominated state, with fish struggling through oxygen deprivation.

Ecological shifts can be contrasted to normal evolutionary paths. A threshold, or tipping point, sees the transition from one stable state of living beings in balance with their environments, into an alternative stable state. A panarchy of smaller-faster states and larger-slower states can be stable (Holling et al., 2002).

3.5 Processual Changes: (re)designing sequences

Process is an arrangement in time (Gharajedaghi, 2011). Philosophically, process precedes structure, as structure can be seen as a slowly-changing process. Mortal

human beings may perceive a mountain as structure, but the mountain does change over time. Western philosophy from the ancient Greeks (Aristotle) through the Enlightenment (Descartes) has largely been premised on substances (Robinson & Weir, 2024). This premise leads to thinking of changes as unfreezing-moving-refreezing, often attributed in organizational change theory to Kurt Lewin (Cummings et al., 2016). Process philosophy deemphasizes being in favour of becoming (Seibt, 2024). Foregrounding processes ahead of objects reorients methodological approaches (e.g. in systems engineering, Object Process Methodology starts firstly with processes, and secondly with objects) (Dori, 2016).

Sequence matters, in a processual approach. In telecommunications use, a preferred ordering of routing calls is associated both with features of the receiving instrument and the preferences set by the called party. A phone number may be associated with a landline instrument, a TTY device for the hearing-impaired, a fax machine, a pager, or a mobile device. There's a sequence for routing preferences, e.g., after the desired number of rings, no-answer-transfer specifies an answering machine, or another device to be called. The elderly tend to prefer voice calls, falling back to answering machines where calls can be screened. High school and college students formed by the isolation of COVID-19 pandemic shutdowns often first check video snippets and photos on social media streams, and then respond with emoji or short messages. Mobile telephony did not initially exist in the 1950s and 1960s, echoing Alan Kay saying "technology is anything invented after you were born". When a party from one generation is poorly connected with a party from another generation, the sequence in which the communications medium is chosen makes a difference.

3.6 Textural Changes: (re)designing weaves in time

Texture has a meaning that is unrelated to "text". Contexture can then be disambiguated from context. As a noun and verb from medieval Latin into 17th century France and Italy, there's a sense of "action or process of weaving together or intertwining; the fact of being woven together; the manner in which this is done, texture" (OED, 1989). The act of weaving brings together threads or strands. Active engagement with threads over time is a "*meshwork* of entangled lines of life, growth and movement". We live through a web of time, "not a network of connected points, but a meshwork of interwoven lines" (Ingold, 2011, p. 64). A meshwork better describes

collections of knots created by weavers, rather than joints made by carpenters. Prioritizing a more temporal view, "the necessity of the knot is not a brittle one that allows for freedom only in the spaces left between, but a supple necessity that admits to movement as both its condition and its consequence" (Ingold, 2015a, p. 230).

Textural changes recognize the lived history of threads in times past. Living systems embody their experiences. We can each be seen as living along individuated threads, as lifelines, with occasions where we meet each other, in person, to tie a knot. Childhood friends have historically deep intertwinings not apparent to new acquaintances. Close friends often re-engage with a sense of picking up from where they left off, where a conversation from years ago can be continued as if it was from yesterday.

Changes in texture, represented by threads in time coming together in knots, dissolve distinctions between a system and its boundary. If a boundary is to be considered, it could be a boundary in time. Wholes co-respond with wholes (Ingold, 2015b, 2017). A knot might be projected at some time in the future, but may be subject to a larger texture. Textures in time may be tightly woven or loosely coupled.

3.7 Rhythmic Changes: (re)designing cyclical oscillations

Rhythm is associated with cycles, and can be better appreciated from a philosophical grounded in process rather than in substance. Living systems experience rhythms as regularly repeating patterns. *Kairos* is qualitative duration as felt time with opportune and inopportune moments, as compared to *chronos* that is quantitative clock time. More formally, "Chronos is 'the chronological, serial time of succession, … time measured by the chronometer not by purpose'. Kairos is 'the human and living time of intentions and goals … the time not of measurement but of human activity, of opportunity'" (Orlikowski & Yates, 2002, p. 686).

Since rhythms have a regularity, it's rhythmic changes that are noticed. Heartbeats are measured while a patient is resting, and faster pulses are expected while exercising. Breathing is natural, as inhaling and exhaling, with discomfort elevating to panic as oxygen levels get low. The autonomic nervous system controls involuntary bodily functions, largely unconsciously, to regulate internal processes.

Rhythmic changes might be depicted as sine waves that become more compressed or stretched. Rhythms come with a sense of anticipation, with histories setting

expectations of patterns that have been previously experienced. Drawing a straight line as a general trend through a rhythm may be informative, at the risk of losing richness in amplitude and frequency. Efforts to dramatically change rhythms from patterns felt as natural or comfortable may be resisted.

3.8 Polyrhythmic Changes: (re)designing synchronic tempo

Polyrhythms are exhibited as strands in a weave of time. Coordination has commonly been synchronized by clocks since the 15th century, and in standard time as established by railways in the mid 19th century. Still, we are accustomed to individuals and/or cultures that run habitually late, or early.

A polyrhythmic ontology comes from body movements with Rudolf Bode (expressive gymnastics, circa 1920) and Rudolf Laban (expressionist dance, circa 1922) (Laban, 2014). Ur-rhythm (as original or primitive rhythm) is expressed in terms of *Eu-rhythm* (as good, well, or pleasing rhythm) or *Kako-rhythm* (as bad, wrong, or evil rhythm). An individual has the option to harmonize or connect his or her personal rhythm [*Eigenrhythmus*] by (i) hedging to exclude the kakorhythmic relative to their skills; or (ii) increase their skills to the ultimate, to experience as eurhythmic an all-encompassing rhythm [*Allrhythmus*]. Studies of urban spaces and their inhabitants on the production of social practices were published as rhythmanalysis (Lefebrve, 2004).

Polyrhythmic changes are common in music, where bands aim to swing rather than play in robotic meters. "Rhythmic play as the confluence of rhythm, motion and cognition appears early in human development" (Hesselink, 2014, p. 69). Musicians playing together as a band, without a conductor, mutually sense sections where the tempo is faster, and sections when the tempo is slower. Further, band members don't necessarily play on the beat. The song "Roxanne", by The Police, originated from bassist Sting as a "bossa nova", became a "hybrid tango" through guitarist Andy Summers, with "reggae in style" played by drummer Andy Summers. Together, the band did not play a reggae rhythm: "the guitar is playing staccato chords that fall *on* rather than off the beat", and "the bass plays a jabbing repeated-note riff that accents the second beat of the bar, in tandem with the bass drum" (Spicer, 2010, p. 134). In the chorus, the style changes from reggae to punk.

Polyrhythmic changes may be tough for the 3% of the population that has beat deafness (Hawthorn, 2023). On the piano, 90% of right-handed people may be challenged to carry a count of two in the left hand, against three in the right hand. Relatively few people can attain four-limb freedom on a drum kit. In an American study of students 2009-2013, 24% of the class of 2013 enrolled in at least one year of a course in band, choir or orchestra (Elpus & Abril, 2019). Across all schools, 75% offer the opportunity to take a music course. As part of a well-rounded curriculum, "Education in the arts promotes habits of mind and ways of thinking that enhance the student experience of school and the outcomes of schooling (Elpus, 2022, p. 50). Skill with polyrhythms can be developed through arts education.

3.9 (Con)textural Dyadic Changes: (re)designing diachronic pacing

(Con)textural Dyadic thinking extends the research into the philosophical foundations of Classical Chinese Medicine (CCM) (Lee, 2017b). While the practical application of classical Chinese science personalizes treatments for individual patients, foundations trace back to the Yinyang School of philosophy (770 – 221 BCE), one of six lineages in the Warring States period described by Sima Tan (Feng, 1948; Peng, 2024). In a constructionist philosophical approach (Littlejohn, 2022) applying root metaphor theory (Pepper, 1942; Duncan, 1982), (Con)textural Dyadic thinking has been proposed as a fifth World Hypothesis (Ing & Metcalf, 2023; Ing & Nousala, 2025).

Classical Chinese philosophy is inherently processual. In a philosophy of body, change occurs primarily through internal conditions, and secondarily through external causes.

Internal conditions, in a system of interest (e.g. a body), are expressed with yinyang as two coupled processes: yin qi and yang qi are opposites that are interdependent, and mutually consuming in the intertransformation of one to the other. "Change takes place only when the internal conditions are ripe" (Maciocia, 2015, p. 8). An egg turns into a chick with the application of heat, because a fertilized egg has the capacity for that transformation.

External conditions can also be expressed as yinyang. The seasons of the year are ecologically imprinted into trees as rings, that a dendrochronologist can infer weather as too wet or too dry (Lee, 2017c, p. 139). The dyads of yin and yang are commonly

multiplied into a seasonality of four, and can be extended in the eight trigrams (i.e. ba gua) of the Yijing (I Ching, Book of Changes).

One way of understanding yin and yang is as emptying and filling. The processes occur concurrently, e.g. food empties in our stomachs, between meals when we fill our stomachs. Maximum yin occurs when qi is fully released (i.e. qi san 气散 qi-in dissipating mode). Maximum yang occurs when qi is fully material (i.e. qi ju 气聚 qi-in concentrating mode) (Lee, 2017a).

Emergence shows up as properties of a whole that are not exhibited in its parts. While modern Western philosophy tends to think about parts in spaces (as structures), we can carefully consider parts in time (as processes). Synchronic emergence focuses on the properties of objects at a higher level at a point in time, which aren't at lower levels, independent of historical factors. As an example, the property of wetness is in water, not in its constituent hydrogen and oxygen. A synchronic approach is static, e.g. a photographic snapshot. Diachronic emergence focuses on new phenomena that appear through time, rooted in historical processes and evolutionary trajectories.[1]

The nine systems approaches described above are not mutually exclusive. In considering an engagement involving changes in systems, a designer is likely to foreground one of the nine approaches, treating others as secondary. The conceptual spectrum ranges from approaches that emphasize form, stability, and spatial relations (e.g., structural, functional) to those that emphasize temporality, rhythm, and processual unfolding (e.g., textural, polyrhythmic, (con)textural-dyadic). This spectrum reflects a deeper shift in orientation: from viewing systems as static configurations to understanding them as dynamic, time-bound processes.

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[1] More formally, the distinctions of synchronic and diachronic can be clarified:

> … emergence can be characterized by its synchronous (synchronic emergence) and diachronic (processual or dynamical emergence) dimensions. In the first case, we capture the emergent at a given moment, as relatively independent and considered a-temporally, by studying, e.g., the dependencies between it and its base. In the second, we characterize the emergent by describing its evolution, so we are interested in the very process of emergence. Emergence occurs between the point in time (t_1) when the conditions for its occurrence appear, and the subsequent point (t_2), in which the emergent is already formed (which, of course, does not exclude further changes). In this case, it is best to define emergence as a process in order to clearly distinguish this type of description from the abovementioned static (synchronous) description (Dombrowski, 2024, p. 442).

An inquiry into systems changes then may lead to reconsideration of the sequencing of questions.

4.0 What+Why or When+Where?

In the research stage of designing, the questions asked shape the arc of the engagement. The definition of the system of interest, both in space and in time, provides a starting point for considering changes that are plausible and preferred. Much of mainstream systems thinking from the 20th century is based on a synchronic perspective. Systems are presumed to have been in a state of equilibrium that was disrupted, and a subsequent restabilization can be established with an active intervention. This is an "unfreezing → moving → refreezing" paradigm. With objects changing on a synchronic grounding, questions of "*what* is the system" (ontology) and "*why* did the change happen" (causality) take precedence. Systems are named and treated as objects, towards refining a shared definition of interest and scope. Objects are assumed to remain static or maintain momentum, unless disruptive conditions occur.

When change is understood as continuous and persistent, attention shifts from snapshots of objects, towards unfolding processes. Better questions for this diachronic grounding, are "*when* does a shift occur" and "*where* is the zone of interest". Phenomena are seen not as snapshots, but instead as durations and regions. A living system is recast as a thread in time. When a thread engages with another, a knot is formed as a conjuncture with histories in a texture. Knots may gradually loosen and unravel. The conjuncture may later be rewoven, casually or intensely, at one or more occasions. The couplings and decouplings become embedded in the experiences of parties involved. Attempts to replicate an event may produce a facsimile of the phenomenon, but the lived richness is lost. A concert experienced live by a group of teenagers becomes registered as a shared experience. A recording of that concert reproduces the sound, but not the presence. Years later, even if the music endures in memories, the emotional resonance may have changed.

A 2023 survey of 29,565 respondents across 31 countries found 78% feeling "the world is changing too quickly for me" (Stewart, 2024). This sense of volatility and uncertainty has contributed to anxiety about a *polycrisis* of overlapping challenges in politics,

society, technology, economics and/or environment. If stability is no longer a realistic premise, the approach to designing for changes in systems should follow a different path. Rather than framing synchrony "at time" as a series of discrete points, we might reframe diachrony "through time" with change as omnipresent.

This reorientation from a synchronic frame to a diachronic frame calls for reconsideration of ways systems changes might be approached in design practice. Changes should not be regarded as transitions between states of stability to be managed through willful action. If changes are continuous and embedded processes, designing should then nourish or unblock the natural flows in systems by attending to kairotic rhythms, situational propensity, and dyadic diachrony (Ing, 2025). Section 5 introduces the Pacing Changes approach that shifts from designing *for* change to designing *with* change.

5.0 Resequencing Systems Thinking → Pacing Changes

The dominant approach way to (re)design a system follows a logic of idealizing a future state, analyzing the current state, and then finding ways to bridge the gap. This pattern represents unfreezing → moving → refreezing framing, which might be better depicted as disassembling → rearranging → resynchronizing. In the list of nine approaches outlined earlier, the first four are most associated with the logic of stability. A *Pacing Changes* approach reorients systems changes towards a diachronic style. The latter five approaches outline reflect increasing radical departures from the mainstream.

Introducing a *Processual Changes* approach of (re)designing sequences can be a relatively minor adjustment. After major structural changes have been introduced, reordering a few operational steps to improve functionality seems commonsense.

Appreciating a *Textural Changes* approach or (re)designing weaves in time recognizes complexity across a variety of individuals and activities. Acknowledging the history of timelines or lifelines with prior compatibilities or conflicts improves cooperation in planned and unanticipated junctures to come.

Taking a *Rhythmic Changes* approach or (re)designing cyclic oscillations acknowledges that living beings don't follow the absolute regularity of machines. Performance on

some days will be better than others. When a period of heavy exertion is required, preparatory rest and post-workout recovery is reasonably expected.

Orchestrating *Polyrhythmic Changes* as (re)designing synchronic tempo involves adjusting the pacing of multiple overlapping processes. The periodicity of threads and textures, as waves, may be shortened or elongated, to a limited extent. The plurality of living rhythms may (or may not) be coupled to encompass auspicious providence, or decoupled to preclude unfortunate tragedy. Coordination can be extended to accommodate neglected natural rhythms, e.g. lunar or solar cycles.

Enacting *(Con)textural Dyadic Changes* as redesigning diachronic pacing draws on an advanced understanding of yinyang in the system, and in associated textures. Living systems have bodies that are continuously emptying (dissipating) and filling (concentrating).

Reframing towards a Pacing Changes approach involves three reorientations:

- From Control → Propensity: Deprecating forceful regulation through action → Elevating the concurrence with natural predispositions;
- From Causality → Rhythmic Texture: Deprecating bias-for action → Elevating situational timing for auspicious conditions; and
- From Teleology → Dyadic Shifts: Deprecating pursuits of ends (ideals, objectives, goals) → Elevating ((yin qi) ∝ 1/(yang qi)) wayfaring in unfolding wanwu [concentrating ⇌ dissipating] transformations.

Designers may consider whether a change initiative at hand might be portrayed not as a forced step change, but instead as transitions that occur under more natural conditions. The Western philosophical style on causality directs yǒuwèi (willful action) with force. A classical Chinese style on efficacy prefers wúwèi (non-intrusive action) via propensity.

The most extreme reorientation on systems changes towards (Con)texturalism Dyadicism is difficult. Western foundations tend to reduce towards objects as singletons (i.e. ones). A yinyang foundation requires always thinking of dyads (i.e. twos) in dyads (twos). This challenge is reflected in two maxims:

> "The test of a first-rate intelligence is the ability to hold two opposed ideas in the mind at the same time, and still retain the ability to function" (Fitzgerald, 1936; Martin, 2009)
>
> "Nous sommes des adultes et peut compter jusqu'à deux" (André Glucksmann (1937-2015, France). "Grown-ups should know how to count to two" (Gopnik, 2024)

Pacing Changes approaches call for new practices and methods, based on newly developed theory and philosophy.

Designers involved in initiatives espousing systems changes may find the distinctions and descriptions outlined above helpful in shaping the scope of their engagements. Clients, stakeholders, and/or funders may not concur on the type and/or extent of systems changes expected, nor on their capacities to commit resources towards a transition. The nine systems approaches presented above do not represent a fixed sequence or a prescriptive hierarchy. The approaches span a spectrum of orientations, from space-dominant (e.g., structural, functional) to time-dominant (e.g., rhythmic, (con)textural-dyadic). No single approach is universally suitable. The nature of a system of interest, along with the patience for unfolding adaptation or active intervention, influences the selection or combination of methods associated with approach(es). In practice, establishing which systems changes are *not* desired may be easier than attempting to specify precisely a journey on which unanticipated diversions may branch. This reflective process encourages designers to look beyond their habitual models and techniques, towards engaging with change as a dynamic, relational, and contextually grounded practice.

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