Creative Ecology:
a new model for resilience
in creative communities

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Creative Coalition
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Abstract: Increasing complexities brought about by global crises are calling for us to actively disrupt and challenge the conceptual frameworks currently dominating cultural policy and theory. Creative ecology offers a new paradigm that recognises the multifaceted nature of creative communities and reveals the interdependencies that exist within them. Findings from an extensive enquiry into the creative ecology in Auckland, New Zealand, revealed that such a shift in thinking offers the best hope for improving resilience and encouraging growth. The creative ecology model moves away from industrial, discipline-centric understandings of artistic practice and instead places focus on the system of relationships present in the community and beyond. Ecological thinking is currently being applied in many sectors, from psychology to finance, as part of the search for more effective ways of analysing and responding to a context of rapid change and disruption. The creative ecology model provides an important new language and method, as well as a practical way forward that supports creative people, organisations and cities to survive and thrive.

about

As a ‘living document’ this work is constantly evolving as it is introduced to new contexts and receives feedback. This version offers two sections: **theory** and **model**, which have been developed as part of a co-creative process involving an online survey, public input sessions (including a ‘world-cafe’ session), expert interviews, and a young leaders workshop. A third section called **action** is currently in development and requires further input in order to produce findings that can be applied to improve resilience in Auckland. The March public meeting plays an important role its development. It is intended that this research will ultimately be communicated via a digital platform, and is therefore structured in a website format. The website will also feature copies of the datasets collected on Auckland and offer opportunities to feedback and further engage with the project.

Creative Coalition

Creative Coalition is a champion for the creative ecology in Tamaki Makaurau (the Auckland region). We are a non-partisan, independent body that works as a conduit between members of the ecology and beyond, to connect and communicate. In particular, we play a strong role in the political arena, advocating and providing resources on relevant public policies to all of our stakeholders. The Creative Coalition board is made up of leaders who represent a diverse range of disciplines, experiences and expertise in the creative ecology.

The catalyst for forming this group came from a major transition in the local political environment in Auckland in 2009, when eight city councils in the Auckland region amalgamated into one governing body, now known as Auckland Council. This event encouraged members of the creative ecology to work together to identify the challenges and opportunities prompted by the transition. This restructuring, followed shortly after by a major realignment of local government staff, has created the need for new policies to be developed in all areas to fit the new regional governance context. This change presents an exciting opportunity to introduce new frameworks that can respond effectively to global phenomena, evolving understandings of creativity and local aspirations currently shaping our world.

theory: what others have said before us

+ Human creativity is a **system of processes** that exists extrinsically to the individual, organisation, or community. It is '**applied imagination**', that is actively sourced and expressed via **multiple ways of knowing** and feeling.

+ There is a paradigm shift occurring globally across all sectors that is embracing **ecological and systems thinking** in response to times of crisis and immense change.

+ Creative ecology is an emerging concept in cultural policy that places the arts and creativity within a **holistic worldview** and **reveals interdependencies** with economic, social, cultural and environmental systems.

(1) Human creativity is a system of processes that exists extrinsically to the individual, organisation, or community. It is 'applied imagination', that is actively sourced and expressed via multiple ways of knowing and feeling.

We would argue that prevailing definitions of creativity have become increasingly narrow, excluding many from identifying themselves, or what they do, as creative. For this reason, we have followed the arguments of theorists who have articulated more expansive and fluid meanings of creativity. Rather than viewing it as an innate attribute that can be objectively identified within a person, we have chosen to adopt an understanding of creativity as a process, or more accurately, a complex system of processes.

We also borrow from theorists who challenge the common framing of creativity as a purely mental process. The language of ideas and imagination has tended towards the realm of intellectual knowledge, whereas many would argue that physical, spiritual and intuitive ways of knowing, for example, can play equally vital roles in the creative process.

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Psychologist Milhaly Csikszentmihalyi advocates for redefining the view of creativity as a trait or attribute, to one that sees creativity as coming from outside of the individual.[1] He argues that without an understanding of the context of the creative process, and the inclusion within it of processes of social negotiation and validation that determine what is and is not "creative", we cannot gain an accurate sense of the concept.[2] Defining creativity in this way also leads to an acknowledgement that it is impossible to arrive at an independent and enduring set of criteria for judging creativity; rather, it is a concept that changes with context and evolves across time.[3]

[1] Mihaly Csikszentmihalyi, "The Domain of Creativity." Chap. 6 In *Changing the World: A Framework for the Study of Creativity*, edited by David Henry Feldman, Mihaly Csikszentmihalyi and Howard Gardner, 135-55. Westport, CT: Praeger Publishers, 1994, p. 148

[2] Csikszentmihalyi, 1994, p. 135

[3] Csikszentmihalyi, 1994, p. 143

We suggest that the same can be said of arts and culture. Literary critic and philosopher, John Carey, makes a strong case that the only reliable way to define art is as 'anything that anyone has ever considered a work of art, though it may be a work of art only for that one person.'[4] Although this approach appears to 'plunge us into the abyss of relativism', we would argue, as Carey does, that this is an abyss we have always occupied.[5]

To counter the ambiguity that such an approach introduces, we suggest some qualifiers that are relevant to our understanding of creativity in the context of this work. To recognise the presence of creativity we would look for the arrival of something new and unique, brought about through a process of what Ken Robinson describes as 'applied imagination'.[6] Robinson uses these terms to indicate an active and productive process, rather than a purely contemplative or imaginative state.[7]

Neither should the creative process be understood as a purely intellectual one. Instead, it encompasses multiple ways of knowing that can be sourced and expressed from all areas of human consciousness, including: feelings and intuition, conscious and unconscious thought, as well as personal attributes, experiences, and practical skills.[8] Following Csikszentmihalyi, we accept that this includes not just individual processes, but also collective ones, which can involve entire communities.[9]

When we understand creativity at this level, we begin to get a sense of how we can define 'culture' in relation to it. Csikszentmihalyi sees cultural evolution as a 'crystallization of creative processes',[10] and similarly, Robinson describes culture as 'living processes of growth and development'.[11] In Aotearoa New Zealand, our understanding of culture is shaped by the Maori worldview, *Te Ao Maori*, alongside a contemporary Western worldview. *Te Ao Maori* sees culture as embodied in *tikanga* (way of life and protocol), a sense of place among *whanau* (family), and an identity derived from local traditional landmarks.[12]

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[4] John Carey, "What Is a Work of Art?". Chap. 1 In *What Good Are the Arts?* London: Faber and Faber, 2005, p. 60

[5] Carey, p. 62

[6] Ken Robinson, *Out of Our Minds: Learning to Be Creative*. West Sussex: Capstone Publishing, 2011, p. 142

[7] Robinson, p. 142

[8] Robinson, p. 167

[9] Mihaly Csikzentmihalyi, "Society, Culture, and Person: A Systems View of Creativity." Chap. 13 In *The Nature of Creativity: Contemporary Psychological Perspectives*, edited by Robert J. Sternberg. Cambridge: Cambridge University Press, 1988, p. 336

[10] Feldman, David Henry, Mihaly Csikszentmihalyi, and Howard Gardner. "A Framework for the Study of Creativity." Chap. 1 In *Changing the World: A Framework for the Study of Creativity*, edited by David Henry Feldman, Mihaly Csikszentmihalyi and Howard Gardner. Westport, CT: Praeger Publishers, 1994, p. 17

[11] Robinson, p. 209

[12] As expressed to the author by Hinurewa te Hau, Chair of the Matariki Festival Trust and Board Member of Creative Coalition Auckland. (See also the Roshan Cultural Heritage Institute definition of culture in the glossary appended).

(2) There is a paradigm shift occurring globally across all sectors that is embracing ecological and systems thinking in response to times of crisis and immense change.

Ecological thinking is currently being applied in many sectors, from psychology to finance, as part of the search for more effective ways of analysing and responding to a context of rapid change and disruption. This language borrows from nature and biological science, but is increasingly having a wider application as a new lens or methodology. It is being used to make sense of complex, non-linear problems and phenomena that are a feature of these critical times - revealing interdependencies at a holistic level. The spread of this approach is motivated by a desire to strengthen the resilience in various systems, replacing former goals of sustainability, which no longer seem achievable or relevant when change is accepted as a constant.

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Ecology is not a new concept, although its application and prominence has been growing significantly in recent times. The term comes originally from the field of biology and was coined by Ernst Haeckl in 1866 to describe the study of how organisms relate to each other and to their outer world.[13] Ecology particularly seeks to learn about symbiosis within natural systems, as a mutual exchange of benefits that draws nutrients and energy from the environment while at the same time helping to sustain it in the process.[14]

Interdependency, where each member of the system shares the fate of the whole system and vice versa,[15] is the key principle that ecological thinking and analysis carries forward beyond the discipline of biology into the broader study of human systems. The principle of interconnectedness is also recognised as a core tenet within the worldview of many indigenous cultures, providing further evidence of the endurance of ecological thinking throughout history. This is true of *Te Ao Maori*, the worldview of

[13] John Howkins, *Creative Ecologies: Where Thinking Is a Proper Job. Transaction Publishers*, 2010, p. 43

[14] Robinson, p. 223

[15] Marco Iansiti and Roy Levien, ”Strategy as Ecology." *Harvard Business Review* March (2004), p. 69

Aotearoa New Zealand's indigenous people, which sees the world as a network of relationships or *whakapapa,* rather than isolated entities. This is a philosophy also shared by 'deep ecologists', such as Fritjof Capra, who argue that it is only through recognising the networks of relationships and self-organising systems existing in all living phenomena that we are able to understand the activities and patterns of life.[16]

The evolution of these approaches has lead to the development of a type of methodology, or a new lens, which can be applied to assist the study of complex phenomena. It is this language that we have chosen to guide our enquiry into creative practice and the creative community in Auckland. By employing non-linear, holistic models, ecologists like George Sugihara argue that we can more effectively understand living systems that are themselves non-linear, and which are therefore far more complex than previous approaches have been able to recognise.[17] Once we have a more complex understanding, we can then begin to produce powerful new answers about how to build resilience and encourage innovation within communities.

The call to develop resilience in all areas is growing even stronger the more we learn about the present state of humanity's circumstances. The increasing rate of change and disruption, underpinned by serious crises in the natural environment and economy, the rapid introduction of new technologies, shifting population demographics, and a host of other cultural shifts and disruptive models, are currently propelling us into a new normal, one that we may have to accept it is impossible to return from.[18] Our ability to fluidly adapt to these circumstances, to embrace regular disruptions and even see them as opportunities, is determined by our level of resilience. Resilience therefore describes our capacity to stick to our core purpose and avoid a more severe type of disruption - a collapse or 'system-flip' that could derail that core purpose entirely.[19]

Economists, finance experts and business strategists, among other fields, have recognised the importance of building resilience, and are generating new lessons by applying ecological principles. The emergence of the field of 'eco-finance' has already attracted some important proponents.[20] One of these is Andrew Haldane, who as the Executive Director of Financial Stability for the Bank of England, is urging for more 'complete, holistic measures of the health of financial systems'.[21] Analysis of the global financial system in response to such calls has already revealed a previously unknown level of interdependency between twenty-five of the world's biggest banks, highlighting

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[16] Fritjof Capra, "Ecology and Community." Berkeley, California: Center for Ecoliteracy, 1994, p. 6

[17] George Sugihara in Andrew Zolli and Ann Marie Healy. "Robust, Yet Fragile." Chap. 1 In *Resilience: Why Things Bounce Back*. London: Headline Publishing Group, 2012, p. 30

[18] Andrew Zolli and Ann Marie Healy, "Introduction." In *Resilience: Why Things Bounce Back*. London: Headline Publishing Group, 2012, p. 22

[19] Zolli and Healy, "Bringing Resilience Home", p. 44

[20] Zolli and Healy, "Robust, Yet Fragile", p. 47

[21] Andrew Haldane in Zolli and Healy, "Robust, Yet Fragile", p. 82

a need for new approaches in the finance sector that take this interdependency into account and use it to prevent further crises.[22]

In the same way, business strategists are using ecological approaches to show how the health of one business depends on the health of its 'business ecosystem'.[23] This ecosystem is seen to extend far beyond the traditional linear value chain of suppliers and distributors to include any organisation or circumstance that directly or indirectly influences the creation and delivery of that business's product or service. A process that potentially highlights hundreds, or even thousands, of dependencies linked to that business.[24] Business strategists published in the Harvard Business Review, Marco Iansiti and Roy Levien, offer the ecosystem strategy as the best way to cope with the continuous change present in the marketplace, and a way to reveal previously hidden causes of business success and failure.[25] They cite major corporations like Microsoft and Walmart as examples of businesses that have actively sought to improve the health of their surrounding ecosystem as part of a strategy to enhance their own performance success.[26] They also caution, in strongly ecological language, that 'a firm that takes an action without understanding the impact on the ecosystem as a whole, is ignoring the reality of the networked environment in which it operates.'[27]

> "To study creativity by focusing on the individual alone is like trying to understand how an apple tree produces fruit by looking only at the tree and ignoring the sun and soil that support its life."
> - Mihaly Csikzentmihalyi (1994)

[22] Zolli and Healy, "Robust, Yet Fragile", p. 56

[23] Iansiti and Levien, p. 69

[24] Iansiti and Levien, p. 70

[25] Iansiti and Levien, p. 76

[26] Iansiti and Levien, p. 69

[27] Iansiti and Levien, p. 75

(3) Creative ecology is an emerging concept in cultural policy that places the arts and creativity within a holistic worldview and reveals interdependencies with economic, social, cultural and environmental systems.

The field of cultural policy is struggling to keep pace with global trends towards interconnected and systems thinking. There is still much evidence of siloed structures, where industry and discipline-centric models prevail. However, concepts are emerging that begin to apply more holistic analyses to creative processes and communities. Creative economist John Howkins has introduced the concept of creative ecology to the cultural policy discourse to offer an alternative to the economic paradigms that have come before. While this offering of Howkins' makes important progress in updating the discourse, we believe it needs to go further in order to truly catch up with the ecological zeitgeist happening in other sectors. Our creative ecology model <link> proposes a radical new approach to understanding creativity as a system, by destroying the notion of a distinct and separate 'creative sector' once and for all.

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We see the ecological approach as having important lessons to offer what has been known as the 'creative community' or 'creative sector'. Economic paradigms such as 'creative industries' and 'creative economy' have recently dominated how this cluster is described and analysed. Such approaches could be described as 'ecologically invalid', as they remove understanding of the community from the wider context, creating a dangerous disconnect.[28]

Creative economist John Howkins has recognised the limitations of these types of approaches and has called for an ecological account of all creative processes, which includes economic and occupational frameworks (such as Richard Florida's 'creative

[28] Urie Bronfenbrenner, "Developmental Research, Public Policy, and the Ecology of Childhood." *Child Development* 45 (1974), p. 3

class' of workers),[29] volunteer work, and non-commercial or community activity.[30] He advocates for a systems-based theory that encompasses individuals, organisations, businesses, public bodies and the whole gamut of industrial and other sub-groups.[31] Most importantly, Howkins emphasises that this system must 'go far beyond the arts'.[32]

A systems, or ecological approach to creativity is one that encompasses a broad range of members. It dissolves boundaries to invite in those previously excluded and draws connections between economic and non-economic activities. Some, therefore, argue that such an approach has the potential to provide a far more effective policy framework, as it could be said to 'enable the actual conditions of creative work in everyday life'.[33] In other words, this is a framework and a language that is owned by the community it describes - reflecting its members' own perceptions of their identities and activities. Above all, it connects policy makers and the community, enabling them to collaborate strategically in building systemic resilience.

A "creative" ecology thus offers a lens that recognises the multifaceted nature of creative communities and reveals the interdependencies that exist within them. Through this new paradigm, Howkins advocates for a shift in focus from infrastructure and industry to relationships and processes.[34] His key contribution is to provide two sets of criteria for understanding and evaluating ecological relationships: first, he categorises types of relationships as either mimicry, symbiosis (which includes collaboration), communities, or competition.[35] The other set of criteria assesses the ecology's health, looking at levels of diversity, change, learning, and adaptation within it, as well as the ecology's scope and scale overall.[36]

While we make use of these criteria in developing our own model of creative ecology, we depart from Howkins' apparent requirement of these features as determinants of the very existence of a creative ecology. Rather, we suggest that the absence of one or more of these qualities, such as a lack of diversity or scale, may help to explain why that ecology is facing certain challenges, or where its vulnerabilities may lie, but would not prevent the ecology from existing altogether. We understand creative ecology as a

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[29] See: Richard Florida, *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Every Day Life*. New York: Basic Books, 2002.

[30] Howkins, p. 33

[31] Howkins, p. 33

[32] Howkins, p. 33

[33] Catherine Murray and Mirjam Gollmitzer, "Escaping the Precarity Trap: A Call for Creative Labour Policy." *International Journal of Cultural Policy* 18, no. 4 (2012), p. 432

[34] Howkins, p. 11

[35] John Howkins, "John Howkins on the Creative Economy and Creative Ecologies." *Creativity at Work* (2009), http://www.creativityatwork.com/2009/06/09/john-howkins-on-creative-economy-ecologies/#.URxBM7uXR1M.

[36] Howkins, p. 75

universal lens that can be used whereever creativity is present and applied at a range of scales, from the individual through to the global.

Such an approach does not dispute that there are strategic reasons in identifying a 'creative cluster', for example, one which is linked by a common purpose or like processes.[37] In the past, this clustered approach has been seen as especially important for its ability to facilitate policy development and assist in a holistic understanding of creative work and activities.[38] However, we believe that creative ecology achieves this purpose in a way that recognises how creativity operates more like an 'intersector', rather than as a separate and distinct community.[39]

Finally, we must acknowledge where the language of creative ecology, or similar terms like arts ecology, has appeared outside of theoretical discourses. We have observed it popping up in the lexicon of creative practice from time to time in a highly organic way. It is often used to describe how people are connected to other people and organisations, and the functional role they play within their networks. For example, we came across a funding application for a small community theatre that had compiled letters of support from leaders and practitioners across the local community, in which many of these described the vital role of the theatre in its local 'creative ecology' as a platform for emerging artists.[40] It is examples like these, and many others, that indicate the need for a new framework that matches how those on the ground understand their work and contributions, and places relationships at the forefront of our focus.

Read on to discover more about the Creative Ecology Model we have developed >

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[37] Starkwhite. "Rethinking Auckland as a Creative City: Concepts, Opportunities and Practical Steps." Auckland: Auckland City Council 2002, p. 10

[38] Murray and Gollmitzer, p. 419

[39] The idea of creativity as an 'intersector' is explored in more depth in the following section.

[40] The Basement Theatre. "Our History, Our Community." Auckland, 2012.

model: what we created

Our model:

+ Introduces a universal understanding of creativity as an **intersector** - bridging former genre-based divides and commercial/non-commercial binaries, and replacing them with **role-based identifiers**.

+ Provides a new framework for the evaluation of creative processes - placing them **in context** and taking a **multi-layered approach** that connects the individual to the global.

\+ Updates the language of creativity and cultural policy - shifting the focus away from linear and economic descriptions to **cyclical patterns** in relationships and resource flows.

+ **Embraces disruption** and failure as an essential part of the creative process - including people and events which have previously been excluded from explanations of the creative process.

(1) Our model introduces a universal understanding of creativity as an intersector - bridging former genre-based divides and commercial/non-commercial binaries, and replacing them with role-based identifiers.

The creative ecology model we have developed in this report applies ecological thinking to the understanding of creativity as a system of processes, to produce a new language and method, as well as a practical way forward for communities and policy makers alike. Much like the economy, creativity can be thought of as a system that intersects with a broad range of activities and institutions. Our model adds substantially to the concept coined by John Howkins, by breaking the system into its key elements and offering a practical alternative way of categorising and identifying, compared to current industrial and discipline-centric models. Our model assumes that creative processes move fluidly across disciplines and combine a complex mix of commercial and non-commercial goals and strategies. It therefore proposes to group people and organisations by the role they play within the creative system - their purpose in relation to others and to their environment.

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Creative wells vs complex systems

Previous models have tended to promote an understanding of creativity as being contained as if within a "water well" somewhere in society. It is assumed that this well has a supply of creativity that can be measured, and its access is limited to those who know how to draw from it, or who have permission to do so. Sector-oriented descriptions of creativity like the creative industries model, and even the more recent concept of creative economy to some extent, embody the "creative well" idea, and perpetuate the myth that there are creative people or communities that can be easily identified and measured. "Creative well" approaches are popular because they appear to give us a direct and easy method for evaluating the creative process, but they could equally be accused of 'looking under the lamppost because the light is better even though we know the keys are lost in the shadows.'[41]

[41] George Sugihara in Zolli and Healy, "Robust, Yet Fragile", p. 42

In contrast, creative ecology follows emerging strands of thinking that argue for viewing the whole economy as a "creative economy".[42] In other words, creative ecology understands the creative process as an intersecting feature within the economy's innovation system (as well as across other community and social systems). To continue the water metaphor, creative ecology can be thought of as a system of pipes and water channels connecting a city, for example. Much like the water that runs through these pipes, creativity too is a fluid and dynamic resource flowing through the city. In some places the resource is relied on or made use of more heavily and frequently than in others, but whether it is used privately in the home, or by major industrial producers, it is not contained anywhere for the exclusive use of one community. While such an approach may introduce significant complexity, it also removes some long standing boundaries that have been arbitrarily drawn around creativity, allowing us to shed new light on processes and participants who have previously been excluded.

With this image in mind, we will explore how a creative ecology framework can be used to reveal the web of people who frequently "turn on the taps" of creativity within a city, or indeed those that build and maintain the pipes, taps and wellsprings that encourage it to flow.

Roles

Our creative ecology model proposes using "Roles" as a new way of identifying the various types of contributors to the creative process, or in other words, the members, or "organisms",[43] that populate the creative ecology. Roles describe a set of behaviours, attitudes or activities that equate to a functional purpose in relation to others, and to the the system as a whole. Roles provide us with a way of describing participants in the creative process without pigeonholing them according to what they produce, or by a type of activity. This provides greater freedom and flexibility for the participant, as it does not require them to attach themselves to a rigid identity. It also expands the boundaries of what is known about the creative process and who is thought to participate in it.

Previous models are centred around the artist, creative practitioner or creative organisation/business as the core agent of focus. In the creative ecology, only one out of six Roles makes direct use of 'applied imagination', or what is commonly thought of as creativity. Despite this, in the creative ecology all Roles are seen as equally important to the creative process, and even invite those who play a disruptive role into consideration. We recognise the usefulness of subdividing the population of an ecology into groups of like members,[44] and it is our argument that Roles are a better way to do so than via industry or discipline groupings.

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[42] Michael Hutter in "Arts, Culture and Creative Ecologies: Panel 1a the Experts' Perspective." In *Forum for Creative Europe*. Municipal Library of Prague, Czech Republic, 2009, p. 24

[43] We have adapted these Roles from approaches used to categorise functions that have been observed in natural ecosystems, such as producers, consumers, and decomposers.

[44] Iansiti and Levien, p. 71

We propose that there are six types of functions that are most relevant to a system of the creative process: Communicators; Connectors; Creators; Disruptors; Enablers; and Providers.

We list them here alphabetically to show that there is no hierarchy implied in the importance of their function and that they must be considered equally. We acknowledge that within an ecology there will always be high levels of fluidity and complexity where organisms frequently move between Roles or perform them simultaneously. However, we suggest that when a creative ecology is examined at a particular scale, such as the creative ecology of a city, organisms will have one, or two Roles at most that can be said to fit closely to their core purpose.

For example, a major arts funding agency may be a strong advocate for the arts (Communicator), and help to instigate collaboration on creative projects (Connector). Its core strategic purpose, however, in relation to other organisations and within the region as a whole, is to ensure creative people and organisations have the resourcesand support they need to participate in the creative process, therefore placing them firmly in the Enabler Role.

Six Roles of the Creative Ecology Model:

Communicators - Shares, promotes, facilitates conversations and/or celebrates the creative process and the work of Creators. E.g. arts media; arts critics and commentators; cultural policy researchers; arts advocates; etc.

Connectors - Brings people and other members of the ecology together and builds relationships and communities among them. E.g. community arts centres; professional arts networks; industry bodies; online networks; etc.

Creators - Uses 'applied imagination' in the creative process to produce new and unique content to be shared or sold. E.g. artists; creative practitioners; creative entrepreneurs; domestic creatives; arts organisations; creative businesses; art students; curators; artist collectives and companies of performers; etc.

Disruptors - Creates barriers or causes failure in the creative process deliberately or indirectly, or interferes with the function of other members of the ecology. E.g. parents who discourage children from pursuing creative careers; politicians who lobby against arts funding/support; hostile audience members; media unwilling to give exposure to creative activity; aggressive competitors; etc.

Enablers - Gives direct support to the creative process by making resources available, removing barriers, or by giving creative content a reason to come into being. E.g. funding and investment bodies; government agencies; audiences; venues; events and festivals; private sponsors and patrons; etc.

Providers - Supplies materials, services, spaces, human resources, or other types of resources needed in the creative process. E.g. marketing and public relations specialists; educators; digital and technology services; builders and engineers; talent and management agencies; etc.

Audiences, Educators, Providers and "Domestic Creatives"

There are a few organisms that we see as being important to discuss in more detail, because they represent the inclusion of those who have previously been excluded from consideration in other frameworks:

It is a key feature that this model includes **audiences** within its system rather than as a benefactor of it. It is now commonly accepted that the exchange between artists and performers and their audiences is central to the creative processes of many works. In such cases, audiences actively participate through their interpretation and experience

of the work, and earlier on in the process of creation, can act as a key motivation for the work's existence.

Another type of organism which requires further explanation are "**domestic creatives**", which are an example of participants in the creative process who have frequently been excluded from consideration because of their lack of a formal audience. These are the Creators who participate in the creative process in private, for example, through cooking, fashion, gardening or craftmaking (sometimes referred to as "the living arts").[45]

Educators are frequently large and complex institutions, that could easily be said to function in a variety of Roles. Depending on the nature of their core purpose they could shift out of the Provider Role, but we have placed them here initially because we suggest that their main activity is typically as a service provider, where they receive fees in exchange for educating students.

On the whole, **Providers** are a significant group that is frequently left out of understandings of creative processes and communities. Due to the close relationship many Creators have with the medium (or media) they work in,[46] we believe the suppliers of these materials, and other services that assist the creative process, need to be brought more to the fore in the frameworks describing systems of creativity.

(See the end of this section for a special discussion on the role of disruption and Disruptors).

[45] Alan Brown, "An Architecture of Value." *Fuel 4 Arts* (2007), p. 7

[46] Robinson, p. 153

(2) Our model provides a new framework for the evaluation of creative processes - placing them in context and taking a multi-layered approach that connects the individual to the global.

In order to draw an effective picture of the environment in which the creative ecology's "organisms" perform their Roles, our model uses Layers to divide resource flows and networks of relationships into the areas where they mainly take effect. The model also requires any kind of evaluation to occur across at least five of these strata, or subsystems, that make up the ecology's environment. By avoiding simple binaries such as commercial/non-commercial, or professional/community, for example, the model allows a greater degree of complexity to enter into evaluations of creative processes. Including the Layers feature in the model offers a convenient method for breaking down complex activity in a system, while ensuring that the part remains connected to the whole. This approach is, therefore, a safeguard against narrow enquiries, which limit complex understandings by isolating an area of focus from important contextual circumstances.

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Attempts to analyse and evaluate the creative process, its participants, networks and the contributions it makes to society, have tended to remain almost exclusively in one of two camps: community and social wellbeing, or the economy. In the first, the impacts of creativity and the arts on quality of life, cultural identity, social cohesion, and so on, are examined. Whereas economic analysis generates a different language that seeks to quantify and measure industrial output, creative capital, employment and the like. The intersection of these two realms though it may be acknowledged, is not often meaningfully explored, and even then, is treated as the coming together of two distinct fields, rather than as (potentially arbitrary) slices of a complete and complex system. The former approach is evident in the manifestation of what are now commonly seen as distinct sectors - the "creative industries" and "the arts".

The Layers feature in the Creative Ecology Model offers an alternative method of dividing up activity within a creative system. Layers introduce a multi-dimensional approach - grouping resources and relationships according to where they could be said to occur within the system. Rather than limiting analysis to two "slices", Layers

encourage the extension of enquiries towards a deeper level of complexity - examining a system's environment across at least five groups of activity. For example, we could look at the city as a system - examining challenges it is facing at the level of individual inhabitants, through to more macro themes at the economic and political levels. Layers can also be understood as scales of focus - acting as subsystems in and of themselves, which recur infinitely - nesting within each other in a fractal-like fashion. In the previous example, this means it is also possible to focus on the individuals within a city and further deepen the analysis by examining the individual as a system, each one with its own Layers and so on.

To guide a multi-dimensional analysis of context, we have identified five Layers in the creative ecology: Personal; Interpersonal; Institutional; Transpersonal; and Contextual.

This is a method that can be applied to assist evaluation towards a range of purposes. In applying this method, it is likely that our current understandings and definitions may shift in response to the complexity that such a method reveals. When understanding the types of resources a painter might draw upon as part of the creative process, for example, we could take a multi-layered approach and examine her technical skill and work ethic (Personal); her friendships and family relationships (Interpersonal); the arrangement with her dealer gallery (Institutional); her culture and belief systems (Transpersonal); and the socio-political nature of the environment she lives in (Contextual). This may lead to a wider understanding of the nature of the resources that support an artist's work than was previously considered, and therefore provide some powerful insights to support their ongoing resilience.

Five Layers in the Creative Ecology Model:

Personal - Internal to the individual's body, psyche and identity; including their emotions, thoughts, health/wellbeing, abilities and attributes.

Interpersonal - Qualities and characteristics of social behaviour, interaction and communication between individuals; including, for example, honesty, reputation, co-operation, compassion, and trust.

Institutional - Formal interactions, processes and norms that organise and structure relationships; including infrastructure, programmes, platforms, facilities, and sub-groupings.

Transpersonal - Recognition and discourses of collective forms of consciousness and shared values and identities; including culture, whakapapa (genealogy), heritage, and spirituality.

Contextual - Wider system beyond the creative ecology, indirectly shaping its environment, conditions or circumstances; including place, time, natural phenomena, societal rules (political and economic), and population characteristics.

We have listed the Layers in a kind of order for the purposes of the model, suggesting a progression in scale, but we must emphasise that their relationship to each other is in reality too complex to fit into a linear description. While an observer using the creative ecology model may choose to focus on one Layer or subsystem as the main part of their enquiry, such as how social networks (i.e. at the Interpersonal Layer) support the process of film production, the model would encourage them to acknowledge where intersection and influence occurs from the other ecology Layers. In this way, the model encourages a dynamic moving of focus, where the observer is constantly "zooming" in and out to connect the part to the whole. We deliberately include reference to the observer to underscore their role as integral in setting the "frame" of analysis and what is selected for study and discussion as part of their enquiry.

(3) Our model updates the language of creativity and cultural policy - shifting the focus away from linear and economic descriptions to cyclical patterns in relationships and resource flows.

As with the Layers feature, the inclusion of Cycles in the model facilitates a shift in the narrative of mainstream cultural policy. Many have struggled with using economic terms when attempting to communicate the value of creativity. There is frequently a feeling that economic frames of value diminish what many feel to be a deeper contribution to their communities. Cycles provide an alternative way to identify and describe the resources and energy that both feed into and are generated by the creative process. They show how these resources are recycled continuously within the system, fuelling ongoing processes. In this way, Cycles act as a mechanism to describe connectivity between organisms within the system - explaining how resources are shared and transferred between them, revealing their interdependency with each other. This provides a framework that is flexible and expansive enough to embrace both economic and non-economic processes and outcomes in its description of the system.

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In previous models of creativity, the creation of value, and many other processes, has frequently been understood as akin to a linear process of production. Inputs, often framed as investment, pass through the black box of the creative process and are transformed into outputs, or “creative capital”, which contribute to the community or economy. Both inputs and outputs have frequently been characterised as external to the creative process, acting as either enablers, or beneficiaries of it. The linear nature of this description has meant that there is seen to be a clear beginning and end to the creative process - coupled with an expectation that any investment receives a return as the process reaches conclusion. This kind of perspective is evident in many funding models in the arts - which require reporting on outcomes in return for their support, and for their own part, attempt to justify public expenditure in the form of specific contributions to the wider community.

Cycles

We have adapted the ecological language of “trophic webs” to develop the feature of Cycles in the Creative Ecology Model - showing how flows of energy and nutrients in a natural ecosystem connect different species.[47] Cycles are the processes of exchange and renewal that flow between the layers of the creative ecology and connect the organisms within it. This energy exchange can be understood as both resources and relationships, which feed into the system and are generated by it.

The resources and relationships that sustain the creative ecology and support its growth we describe as “Nutrients”. Organisms in the creative ecology, through various processes, convert these Nutrients into “Fruits”, which are resources and relationships that go on to be used by others in the creative ecology and wider ecology. The image of a cycle as a continuous loop, illustrates that outputs are not simply the end of a process, but that they go on to become inputs into new processes. This means that the concept of waste is removed within a systems-based approach. Rather than reaching an end point or product, matter that is produced, as well as that which is not directly used, is continually recycled into new forms within the system.[48]

Two features of Cycles in the Creative Ecology Model:

Nutrients - Resources that feed people and activity in the creative ecology, sustaining them and supporting their growth.

Fruits - Finished products or contributions made by the creative ecology, which convert nutrients into resources that can be used by others.

We suggest that equivalents of these flows can be found in any system and analysed to show how resources and relationships are used within it. By understanding where these connections occur, critical interdependencies in a system can be revealed to us. This means we can appreciate how such relationships not only represent links in a network, but how they fundamentally influence and rely on each other as part of ongoing processes of exchange and dependency. Qualities underpinning relationships such as co-operation, competition and partnership, have the potential to be better understood via such a frame of analysis.

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[47] Zolli and Healy, “Robust, Yet Fragile”, p. 53

[48] Capra, p. 7

The model is inclusive of economic paradigms but seeks to add alternative identifiers and a broader set of measures than economic measures allow for. Once these economic functions are seen as part of a larger system, we believe new insights will be revealed that can go along way to alleviating the challenges and vulnerabilities facing many creative ecologies. Employed in this way, Cycles are a mechanism to help us explain many dynamics occurring in the creative ecology, such as the creation and transfer of value, and the fluid, networked way of organising that structures relationships in the system.

For example, if we look at the creative process involved in writing and producing a play, the playwright may draw inspiration from her cultural identity (Nutrient), and tell a story to her audience that prompts them to examine their own identities, or to grow understanding for others in their community with similar identities (Fruits), the playwright may then get some immediate feedback after the play is performed through interacting with her audience, mentors, media and other performers and writers, or observe shifts in the cultural discourse over time that inspire her to evolve her story further (Nutrients).

> "As various nutrients are passed along through the ecosystem, the relationships we observe are many forms of partnership, of cooperation."
> - Fritjof Capra (1994)

(4) Our model embraces disruption and failure as an essential part of the creative process - including people and events which have previously been excluded from explanations of the creative process.

To truly represent a holistic system, a model for creative ecology must reveal interdependencies between both the good and the bad. It is a common experience of many who participate in the creative process, that failure and disruption are just as likely be the source of new inspiration as more typically positive experiences. Likewise, we cannot exclude those from the system who sometimes act as the source of disruption. By embracing disruption and its instigators, some argue that we have a better chance of building resilience and avoiding the kind of catastrophe that could bring the whole creative system to crisis point.

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Descriptions of the cultural landscape have frequently centred around a creative sector, or community - implying a cohesive and identifiable group of actors and organisations with a common attribute, perhaps their unique level of creative activity. Ideas of communities, by necessity, must exclude as much as they include in order to define themselves - creating a boundary between those inside and outside of the community. Those who work actively against the common goals of the community are naturally seen to exist outside of it. This is not the case with systemic models. A system, a natural ecology, encompasses all types of organisms, even those with competing or mutually exclusive interests. It is this feature - when fully realised - that gives the model its dynamism, balance, and provides the foundation for ongoing systemic resilience.

It is for this reason that the Creative Ecology Model includes the Disruptor in its six Roles mentioned previously.[49] Such a role may seem a surprise to some for the destructive role it plays in the creative process. However, the failure and volatility brought about by disruptions are often as integral a feature in the creative process as enabling activities.[50] Dissent and decline have been said to help prevent rigidity and to

[49] It is important to note that Creators who use the creative process to play an agitating role in the wider ecology, such as those who challenge norms and structures in society, should not be mistaken as Disruptors for the purposes of this model. In that sense they might be the Disruptors of the larger system, but in the creative ecology they are more likely to be working with the creative process rather than actively against it.

[50] Robinson, p. 153

clear pathways for new arrangements, uncovering vulnerabilities and allowing for constant renewal, ultimately supporting the growth and vitality of the ecology.[51]

An acknowledgment of the productive power that disruption has within a system and the inclusion of what were previously considered outsiders to the “creative community”, leads to the increasing dissolution of boundaries around any such community. Adopting a systemic approach to understanding creativity requires us to examine where creativity intersects across the entire system. Meaning connections and interdependencies are discovered, where previously they may have been overlooked. As we will explore in the following section - this new insight could prove invaluable as we move into critical times.

[51] Andrew Zolli and Ann Marie Healy. “Cognitive Diversity" Chap. 6 In *Resilience: Why Things Bounce Back*. London: Headline Publishing Group, 2012, p. 27

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