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Representing Reality: The social organisational insight and potential of Stephen Willats diagrams.

Gráinne Coughlan
Technological University Dublin, d13124634@mydit.ie

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Gráinne Coughlan
Dublin School of Creative Arts
Dublin Institute of Technology

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So to begin; the focus of my current research emerges in general from my interest in correlations between forms of social organisation and the particular processes which contribute to its structure and function, or in systemic terms; how whole systems "can arise or be maintained through forms of communication."[1]

The questions which I want to consider today are how might these processes be articulated in relation to diagramming?

Diagrams have proven useful tools in our ability to conceptualise the world around us, providing as Edward Tufte describes; a place of representation for the "rich visual world of experience."[2]

The diagram as an apparatus to visualise and comprehend complex information, is by extension, capable of assisting in our understanding of interactive possibilities and contributes to future planning.

To address this, I want to consider Willats' use of diagrams to think through the creation of socially engaged art or community art. In particular I will consider the cybernetic underpinning of Willats' diagrams as significant to; as Michael Corris describes in his retrospective of cyberneticly engaged art practice of the 1960s, the " integration of art and the world"[3] and its ability within art practice to be inclusive of multiple perspectives and reflective of the possibilities latent to participants.

So to continue; Willats has been a pioneer of socially engaged collaborative art practice since the 1960s. In line with the evolution in understanding art as a form of communication during this period, for Willats the making of art is fundamentally a social process. His work rejects an autonomous reality, but rather operates in a totality of social relations through mutual exchange and a feedback of the particular context of the work into its production.

At the heart of his work are questions of perception, which encourage thinking about the particular types of interaction that can be set in process between artist environment, object and viewer.[4]

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[1] Francis Heylighen, "Web dictionary of systems and cybernetic" http://pespmc1.vub.ac.be/ASC/ORGANIZATIO.html, accessed 5th October 2016

[2] Edward Tufte, Introduction in Envisioning information, (Warwickshire: Graphic Press, 1990) 9

[3] Michael Corris, Systems upgrade; Conceptual art and the coding of Information Knowledge and Technology, http://www.metamute.org/editorial/articles/systems-upgrade-conceptual-art-and-recoding-information-knowledge-and-technology, Accessed 18th October 2016.

[4] Andrew Wilson, "the audience is the rational" in *Art Society feedback*, ed Anja Casser, Philipe Ziegler (New York; Distributed Art Publications, 2010) 27

An intrinsic and sustained feature of Willats' works throughout his practice has been the diagram. Emily Pethick has previously described the beginning of Willats' exploration of diagrams, as a tool for representing the relationship of artwork audience and social organisation in inclusively[5]consequently the diagram as used by Willats cannot be divorced from the work as a socially engaged project.

His use of the diagram stems from its particular qualities, capable of reducing infinite variables of our realities and presenting a speculation of potential relationships and dynamic processes.[6]

The diagram is utilised both as a planning tool providing a conceptual frame and as descriptive of the work itself, providing a connective role visualising the elements of its particular social subjects in a dynamic state.

Before looking at some of the diagrammatic examples I have selected, I would like now to introduce briefly the aforementioned relationship between Willats' art practice and cybernetics.

The articulation of social processes which concerns his work requires, as Willats' describes in conversation with Emily Pethick, "new languages from outside of art."[7] It is within the discipline of cybernetics[8] that Willats finds a vocabulary to articulate the dynamic relationships implicit of both society and social art.

Cybernetics, as Edward Shanken describes; offered Willats and many of his contemporaries a scientific model for the construction of a system of visual signs and relationships, achieved by utilizing diagrammatic and interactive elements to create works that functioned as information systems.[9]

Willats became interested in cybernetics while studying at Roy Ascott's Ground-course at Ealing[10] from 1962 to 1963, which as Andrew Wilson describes determined for Willats the

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[5] Emily Pethick, "spaces of interaction" in *art society feedback* ed Anja Casser, Philipe Ziegler (New York; Distributed Art Publications, 2010) 103

[6] Stephen Willats, "The role of the Diagram" in *Art as social model: a manual of questions*, (Manchester RGAP, 2010) 11a

[7] Stephen Willats in conversation with Emily pethick, "Art Society Feedback" http://moussemagazine.it/articolo.mm?id=645 Accessed 13th October 2016

[8] Cybernetics is is an interdisciplinary study of the structure of regulatory systems. It investigates how actions by a system cause changes in the environment that can be understood in the system itself in terms of feedback, allowing for adaption of the behaviour of the system to new conditions. In its original conception by Norbert Weiner, it was primarily concerned with physical rather than social systems, although Weiner acknowledged "the importance of the notion and technique of communication in the social system" describing social systems as "an organisation… bound together by the system of communication." See Norbert Weiner, Cybernetics, Communication and control in the animal and machine, (Massachusetts: MIT Press,1948)

[9] Edward A Shanken, "Cybernetics and Art: Cultural Convergence in the 1960s," In *From Energy to Information* ,ed Bruce Clarke and Linda Dalrymple Henderson,(Palo Alto: Stanford University Press, 2002): 155

[10] This interest was also nurtured by his work with Gordon Pask at Pask's commercial company Systems research Ltd

artist as "part of a self-determining system within a social context."[11] Therefore emphasising that artwork had to be part of the world of relationships in which it was conceived.

It is through the central tenets of cybernetics, that Willats developed the diagram as a motif and as a useful way to model concepts of interaction, map relations between social entities and to investigate polemics between fixed structures and the possibilities of self-organisation.

The interface of diagram and cybernetic theory although not exclusive of Willats work offers an alternative interpretation of the creation of socially engaged art.

I would now like to consider Willats' early diagrams as descriptions of his interpretation of arts social relationships, but also as clarifying agents of cybernetic theory on which these relationships are predicated.

Let us look at the first example; the *Homeostat drawing #1* created in 1969, and which is part of a succession if drawings created from 1962 to 1969 which draw inspiration from the homeostat model.

We perceive the Homeostat drawing as a net like structure composed of multiple interrelated boxes. Each box is connected to its four adjacent neighbours via two arrows on each side. The arrows lead both into and out from an individual box. The image is discernible both as a totality and also as set of interacting individual entities.

Homeostat drawing is inspired by the mechanical model 'the homeostat' created by British cybernetic Ian Ross Ashby in 1948. Ashby's model aimed to investigate a systems acquisition of stability in relation to disturbances in the environment.

A homeostatic system internally adjusts to retain its state despite environmental changes[12] its capacity to realise this comes from the, maintenance of essential variables[13] which is referred to as homeostasis.[14]

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[11] Andrew Wilson Andrew Wilson, "the audience is the rational" in *Art Society feedback*, ed Anja Casser, Philipe Ziegler (New York; Distributed Art Publications, 2010) 23

[12] Russell L Ackoff, "towards a system of systems concepts", *Management science* 17, No. 11, July 1971, 661-671, 664

[13] Ross Ashby, Design for a brain, (New York: Wiley and Sons, 1954) 63

[14] Homoeostasis is the ability of a system to maintain its essential variables within limits acceptable to its own structure. The concept was developed by W.B. Canon in 1932 in particular relation to regulation of biological process for example the regulation of the iris or the thermal It was imported into the field of cybernetics in relation technological machine systems by Norbert Weiner of Ross Ashby's mechanical model Homeostat. (See; Norbert Weiner, Cybernetics, Communication and control in the animal and machine, (Massachusetts: MIT Press, 1948). Ashby's Homeostat also heavily influenced Stafford Beers Viable systems Model, which dealt particularly with applications of cybernetics in management (See ;Andrew Pickering, The Cybernetic Brain, (Chicago: The university of Chicago Press, 2010) 11).The term is also applicable to social systems, In 1951 Talcott parsons applied the term to social systems, where social systems where defined by the relationships of the 'internal parts' to the 'environment' (see Talcott parsons, Social systems (England; Routledge, 1951) 18).

The core tenets of Homoeostasis are that of 'feedback'[15] and 'self-organisation[16] *Homeostat drawing #1* therefore can be viewed as a translation of these ideas to diagrammatic form. Taken as individual entities the boxes in *homeostat drawing* are illustrative of feedback; whereby some part of the system output is returned back into the system as an adaptive process in order to main homeostasis through self-organisation.

For Willats social groups are equatable with the homeostat in that "the most important factor underlying a group maintaining its identity is its internal drive towards social stability."[17] Homeostat drawing is exemplary of Lev Manovich's description of the diagram as artistic visualisation[18] productive of "statements about the world and human beings"[19] which are made through particular reductions and choices in data sets. Or as Willat's describes, and I quote;

"The diagrammatic representation of a homoeostatic network informed a new vision of society, and one that led me to the speculative creation of models and their representation as diagrams, which then, by being taken to operational and practical levels of resolution, implemented a program of events between people in a community, or between communities."[20]

Therefore *Homeostat drawing* is useful as a visualisation of the concepts of feedback, and self-organisation which subsequently inform Willat's conception for potential relationships of and between social groups, in particular the relationship of artist, art work and audience.

The maturation of concepts latent to the *Homeostat drawing #1* are also ascribed to this image; an untitled model of the artist working in a social context. The diagram was presented as part of the catalogue for Willats collaborative work *Changing Everything* which was made in 1997 through collaboration with the South London Art Gallery and participants from the Peckham community.

This diagram can be read as a propositional methodology for the creation of socially engaged art.

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[15] A circular causal process in which a system's output is returned to its input, possibly involving other systems in the loop. Negative feedback or deviation reducing feedback decreases the input and is inherently stabilizing leading to homoeostasis. See; Francis Heylighen, "Web dictionary of systems and cybernetic" http://pespmc1.vub.ac.be/ASC/ORGANIZATIO.html, accessed 5th October 2016

[16] Ross Ashby distinguishes between two types of organisation, the first type being the organisation of parts that have relatively little influence on each other to a state where their relationships influence the parts as a whole, Ashby uses the example of embryonic nervous system; Ross Ashby, "The principals of the Self organising system", ECO Special Double Issue, 6 No. 1-2 2004 p102-126, 114) the second type is that which is of interest to cybernetics. This is related to adaption via feedback, which allows the system to adapt or learn through its interaction with the environment.

[17] Stephen Willats, *Art and social function* (England, Ellipses, 2000)158

[18] This is in distinction to information visualisation which Manovich describes as representative of data for data for its own sake. See; Lev Manovich, *Museum without walls, art history without names, visualisation methods for humanities and media students*, 2012 http://manovich.net/content/04-projects/074-museum-without-walls-art-history-without-names-visualization-methods-for-humanities-and-media-studies/71-article-2012.pdf, accessed, 14th November 2016

[19] Ibid, np.

[20] Stephen Willats, *Speculative modelling with diagrams,* (Utrecht: Casco, 2007)np

Artistic intention is represented in the diagram as a form of communication between two nodes; a transmitter, which constitutes the artist and the receiver which is the audience. Surrounding the art work, is a contextual environment in which the art work functions, and beyond that, is the social context, which is described as informing the artist's intention. Methodology is therefore developed by way of communication between the artist and audience, which are in informed by interaction with the social and contextual environments. Thus the diagram reconsiders the audience's role, shifting from a passive observer to an active participant in the production of the art work.

As a diagram, the image is also coherent with Edward Tufts' articulation that and I quote "when the principals of design replicate principles of thought, the act of arranging information becomes an act of insight."[21] The insight gained from the principals of the Homeostatic model characterises the process of feedback and its influence on artistic concept through direct collaboration towards a stable state of agreement.

At a reductive level, the diagram is comparable with the basic relationship between two nodes in an interactive network, which illustrates the transmission and reception of a message, and the resulting feedback, which we are now familiar with as a facet of the *Homeostat drawing*.

In addition to these two 'nodes' Willats' diagram provides an environment[22] in which the communication of message between artist and audience take place. This is a core thesis of cybernetics, emphasised by its originator Norbert Wiener's assertion in T*he Human use of Human Beings* published in 1950 that "society can only be understood through a study of the messages and the communication facilities which belong to it."[23]

The environment is an important entity in the communicate processes, for as Weiner continues to describe and I quote "the process of receiving and of using information is the process of our adjusting to the contingencies of the outer environment, and of our living effectively within that environment."[24]

The emphasis upon a systems relationship with the environment reinforces Willats' conception of art as a social model, and demands that sufficient attention is paid to the social context in which the work is created.

So, having considered the function of Willats' diagram as representative of a general social organisation of art, underpinned by cybernetics, I would now like to explore Willats' use of diagram as descriptive of the expanded relationships within the art project.

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[21] Edward Tufte, Introduction in Envisioning information, (Warwickshire: Graphic Press, 1990) 9

[22] The environment of a system consists of all the variables which can affect the state of the system. Towards a system of systems concepts, definition provided by; Russell L Ackoff, "towards a system of systems concepts", *Management science* 17, No. 11, July 1971, 661-671,

[23] Norbert Weiner, the Human use of Human beings, (London: Free Association Books, 1989) 16 (First published 1950)

[24] Ibid, 18

Let us consider the examples of social organisation from the aforementioned project *Changing Everything*[25] which is described by Willats' as "a "simulation of society"[26] where the theory of relationships discussed in the previous diagrams is transposed onto an interactive environment encompassing of the gallery as a social entity. In this work Willats' intent was to breach the divide between "the meaning of the world inside the art museum and the world outside."[27]

The visualisation of relationships between gallery and its particular community, I argue is comparative with the diagram entitled *Simulation of a Social Organisation,* which is reproduced in the publication *Speculative modelling with diagram*s, 2007 and demonstrates the diagrams application to other models as a means of describing potential social interactions in context.

The original diagram consists of a 'central point formed at the intersection of four triangles. In the diagram for *Changing Everything*, this 'central net' represents the gallery, which surround by similar various nodes in the original diagram correspond to four local institutions in the Peckham neighbourhood, Peckham Library, The Baptist Church, The Women's centre and the Vietnamese centre, which form the environment of the project.
On both diagrams the interactions between institutions is clearly visible on the boundary of the diagram, while the interaction at the centre positions the possibility of the museum as an "open context" in which the experiences of the community affect the meaning of the gallery environment.

As a diagram, the abstraction and reduction of complexity of the social system is rendered possible by another core tenet of cybernetics; that is black box thinking which enables the speculative models of organisation and system to be developed in the realms of cybernetics[28] and makes Willats' visualisation of relationships within complex social systems possible.

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[25] The intention of changing everything is that the divide between he language and meaning of the world inside the art museum and the psychologically and socially removed by representing that world as an active state in the museum. A series of issues of concern were identified from communication with participants, these were then presented in the form of a problem situations. Mosaic grids displayed these issues which were loaded by text and images gathered by the participants. The mosaics are viewed by the aid of a guide book, which contains questions derived from each issues which the viewer is then invited to respond to the issues on a response sheet which are displayed as an installation in the gallery also.

The issues that were focused on are described as symbolic of a wider culture, Such as 'disability and access', 'communication between generations' etc. Thus the museum becomes an "open context that embraces the relativity of peoples cognition providing them with the tools and means to create their own access to the art work. A walk was created which encompassed several local institutions, each participant would take this walk and used a film camera to document the general environmental ambience. In a session following this, participants decided which references they wanted to be externalised on their particular 'response mosaic' subsequently displayed on a mosaic grid on the gallery walls.

[26] Stephen Willats, "Changing Everything; an introduction", in *Changing Everything* (London: South London Gallery, 1998) 7

[27] Ibid 8

[28] Stephen Willats in Speculative modelling with diagram, Casco Utrecht 2007 n.p.

A range of Willats' work has been concerned with activating the museum as an "interactive exchange point between institutions and their communities"[29] and articulating visually the possibilities for such relationships. For example in the following images, are taken from conceptual drawings for *Between Two Institutions* developed in Leeds in 1987 and accessible at the Henry Moore Institute, specific attention is paid to the relationship based on feedback and exchange of realities, between the gallery and the world outside, in which a transformed counter consciousness is stabilised through negotiated realities. It places the gallery's function as an active agent of society to the fore.

These diagrams as sketches, are an intrinsic part of Willats' preparation methods, and remind us again of the Tufts description of the diagram as an act of insight, as the Gallery and the nature of its potential relationship to the world is positioned visually.

And now To return to *Changing Everything*, this diagram entitled S*ymbolic Worlds* can be viewed as an elaboration on the kinds of interactions taking place at the centre of the previous diagrams, changing everything and simulation of a social organisation .

Changes in state via the symbolic world are emphasised in the diagram. Through the audiences interaction with the symbolic world of the social arts project, transformation of the cultural symbols of reference contained in it are opened up to freely impact upon the audiences own contextual reality.

This act stimulates individual expressions of self-organisation, in which Willats would assert the "normal rules and conventions of what we are led to call normality"[30]are re-negotiated.

This re-informs the motivation of the work as acceptance of concepts of relativity, transience and fluidity[31] which shape the direction and development of contemporary culture.

As my final example, I would like to look briefly at Willats' use of diagrams, as speculative modelling tool.

The example I use here today is *The World as it is the World as it Could be,* which was created as preparation for Willats' work in Milton Keynes on a project entitled *From Person to Person from People to People, 2006*

The diagram depicts relationships between two main variables indicated by the prominent spheres and the dynamic events which allow the transfer of information between states visualised as the interconnecting lines. Each line joins a square forming a sequence which become progressively more complex. These represent for Willats a change in 'resolution levels,' by increasing the resolution "ever more complex forms come into focus"[32] allowing for descriptive ideas of the world in general or a particular social system to be transformed into an imagined and speculative state.

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[29] Stephen Willats," Introduction" The Art Museum in Society, (Middlesbrough, Middlesbrough Art Gallery, 2007) 6

[30] Stephen Willats, transformers, in The Art Museum in Society, (Middlesbrough, Middlesbrough Art Gallery, 2007) 48. This is in particular relation to Willats' work 'transformers' Laing Gallery Newcastle 1988. The concept of transformation has been a corner stone of the relationships between individuals and institutions.

[31] Stephen Willats, "Changing Everything; an introduction", in *Changing Everything* (London: South London Gallery, 1998) 7

[32] Willats in speculative modelling with diagrams (Utrecht, Casco, 2007) n.p.

And so conclude the diagrams I have presented provide us with innovative ways to think through and to model forms of social organisation. Of particular interest to me is how cybernetics, and its focus on processes of feedback, self-regulation and communication helps us to think about forms of social organisation.

Edward Shanken describes the role played by cybernetics in the teaching of Roy Ascott, placing particular importance on how and I quote "the flexibility of cybernetics allowed that theory be applied to a wide range of social contexts"[33] It is the interdisciplinary character of cybernetics that recommends it as a model for re-conceptualising arts social role.

In particular relation to Willats' work; Casser and Ziegler in 2014 describe the social pedagogical role of Willats' work in terms of its capacity to challenge a 'dominant consciousness through the reorganisation of arts social relationships.[34]

Past reorientations of education along cybernetic lines in the 1960s[35] described by David Mellor, including those offered by Willats and his teacher Roy Ascott before him, together with the particular topic of this presentation being of course; Willats' use of diagrams to model forms of social interaction offers us a methodology to think about social art practice in diagrammatic and cybernetic terms.

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[33] Edward A Shanken, "Cybernetics and Art: Cultural Convergence in the 1960s," In *From Energy to Information* ,ed Bruce Clarke and Linda Dalrymple Henderson,(Palo Alto: Stanford University Press, 2002) 14

[34] Anja Casser, Philipp Ziegler, "preface", *Art Society feedback*, ed Anja Casser, Philipe Ziegler (New York; Distributed Art Publications, 2010) 23 although this is related to Willats models of relationships between art work audience, and artists as described in diagrams later

[35] As described by David Mellor, "codes", in The Sixties Art Scene in London,(London: Kensington Press, 1993) 110