

Prefiguring the design of freedom: An informational theory approach to socio-political cybernetics; analysing the messages in 2021 Colombian uprisings.

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Abstract

Origin. The research analysed the messages communicated during the uprisings in a city in Colombia during 2021. The objective of the study was to determine the organisational idea of the country prefigured by the protestors during the marches.

Method. The research uses participatory observation in an ethnographic method for data collection; for data analysis and reduction, it uses grounded theory; and for data analysis, it uses cybernetic communication modelling and the viable systems model. During the six marches, the study registered and analysed the messages contained in speeches, alternative media outlets, chants, signs, graffiti, and theatrical plays.

Findings. It identifies the people's demand for autonomy in the country, the emergence of new political identities, the use of telecommunications as a means for changing the state's institutions, the use of art and culture in the country's demonstrations, and the demand for the respect of human rights. The study analysed the findings using the socio-political cybernetics framework proposed by Stafford Beer.

Originality. The article presents a novel approach to the study of the Colombian uprisings of 2021. The paper applies the socio-political cybernetic approach, which is uncommon in studies in cybernetics. It also proposes an extension to the cybernetic theory of communications.

1. Introduction: The Colombian Uprisings and Information

This article offers a framework to understand information elicited during political demonstrations and interpret it towards a model of how society should be. Stafford Beer thought cybernetics had the power to change the world and that political ideas could be embedded in a cybernetic model that supports that change (Medina 2006). Umpleby (2012) coincides with this view, and in a tutorial conference about the history and development of cybernetics, he concluded that British cybernetics displayed a strong sense of empathy towards the poor and disadvantaged. Even though there is currently a resurgence in management cybernetics, there are not many academic publications that explore the intersection of management cybernetics and political activism (Osejo-Bucheli 2023c), except for a few explorations specifically in anarchism and cybernetics (Swann 2020, Osejo-Bucheli 2023a). Beer, in his book *Designing Freedom* (originally published in 1974), a book written after the experience of Beer in Chile, reflects on the dynamic nature of society and the way cybernetic thinking can help to improve it before offering a general outline for a government of "the people." An important part of a cybernetic government is how to listen to the people. For this, he proposes a set of technological devices that would eventually manage that information. Although almost half a century has gone by and a steep technological development separates us from Beer's time, listening to the will of the people is still a challenging task, as will be apparent in the following pages.

This article uses as a case study the Colombian uprisings of 2019–2021, where a wave of protests led by people of all ages and backgrounds took place. Our investigation accompanied an anarchist collective that took part in six of the major protests in 2021 in a Colombian city. Initially, collectives of any political denomination and people who gathered spontaneously chanted, carried signs, painted graffiti, and sang messages about what each group considered relevant protesting for. The dynamics during the protests made people chant messages in unison, in a similar fashion to what happens in a football stadium, changing the content of the initial messages dynamically from various forms of protest to a prefiguration of the desired organisation of society. In this article, we share an alternative on how to understand that information, along with the findings of what the people demanded during the uprisings.

The cybernetic theories discussed in this paper are of two kinds: the cybernetics of communication and the cybernetics of organisation. As far as communication goes, the paper discusses and extends Shannon and Weaver's theory (1949, 7) and regarding organisation the paper applies mainly Beer's Viable Systems Model (VSM) theory (1972, 1979), not disregarding other cybernetic ideas by the same author.

1.1. The cybernetics of communication

Shannon and Weaver's communications theory is normative and positive, as its intention is to describe the ideal dynamics of communication. It states that the message emitted by the information source is encoded by the transmitter, who emits a signal through a channel; the signal is subjected to noise through the channel and is then accepted by a receiver, who decodes the message, reaching its destination.

The model implies that there is a message that should be transmitted with fidelity from the source to the destination. The message is encoded in a way that is supported by the channel; for example, in the case of Shannon's investigations, the sound of human verbal communication is transformed into electric signals travelling through a channel of copper wire. The model also proposes that there is a noise source that affects the channel, generating distortion in the message; the distortion in the message is called noise. If the message is received by the destination, it is decoded into an understandable form. In Shannon's example, the electric signal is decoded by a telephone, which transforms the electric signal received through the copper wire into a wave perceivable by the human ear. Some of the identifiable limitations of the model are that it does not account for non-verbal communications subject to interpretive dynamics; it does not include feedback or error correction mechanisms either; and it reduces variety by simplifying people into sources, destinations, encoders, and decoders.

1.2. The cybernetics of organisation

According to Beer (1993), institutions are dynamic systems in catastrophe due to internal conflicts. He argues that the government should function as "a dynamic and viable system that has liberty as its output." Socio-political cybernetics is a scientific discipline that examines the behaviour of

institutions, similar to how hydrodynamics studies the behaviour of waves (Beer 1993, 2). The VSM is a systemic tool to support organisational design; it is based on a neural network where each node is autonomous and viable. The basic elements of the model are the Operational units (O), the environment (E), and the meta-system (M); correspondingly, those who implement the organisation's purpose, the niche where the organisation is embedded, and the managerial or technical support.

In Fig. 2, 1a–1c are the operational units; each one has its own operational management, and each of the units also connects with its operating environment. The union of all the operating environments represents the general environment (E). In the meta-system (M), there are systems 2–5; they support the operational units so that they cohere into the viable system. We will discuss in the methods section the relevant parts of the model for this research.

The two theories and their associated models are sufficient to understand and design communications and organisations in most cases.

However, the combination of those theories has proven insufficient to account for the meanings of the messages in an “open channel” where a multitude of messages are simultaneously emitted, as in the case of the protests in Colombia. Moreover, the case study presents several challenges for the theory, including the presence of numerous messages, the occurrence of simultaneous conversations, the synchronicity of messages, the similarity of messages, and the translation of these ideas into an organisational model that effectively implements the concepts conveyed in those messages into a workable governing framework. Solving this puzzle is important because at least two contributions could be accredited: one regarding communication theory and one in social-organisational theory, both in cybernetics: an extension to Shannon and Weaver's communication theory that allows the understanding of open channel communication, and a contribution to Beer's theories regarding the elucidation of people's preferences on the administration of the state.

The purpose of the article is to conduct research on “the will of the people” (Beer 1983, Beer 1993b) regarding the social organisation of the country contained in the messages people produced during the marches. The academic literature extensively applies Beer's theories to both private and public organisations. However, the use of socio-political cybernetics is limited, apart from Stafford Beer's notable experience in Chile during the 1970s. Accomplishing this objective would entail revisiting the less commonly explored approach in Beer's cybernetics, which involves utilising organisational cybernetic tools to analyse the socio-political state of a nation based on Beer's theories. This, considering the present technological progress, has the potential to advance Beer's theory through a novel social contextualization. The application of socio-political cybernetics to the ideas people communicated could also shed light on how people prefigure the organisation of the country.

The article is structured into the following subsections to present its findings: The first section provides a concise introduction to the case study and the messages that the group we accompanied aimed to convey during the marches. The second section proposes an expansion of the theory of communication that aids in explaining the findings. In the third section, we present the emergent messages from the marches in a data structure by applying our extension to the theory of communication. Next, the fourth section presents an interpretation of our findings based on Beer's (1993) socio-political cybernetics and Beer's recommendations for managing institutional complexity. The paper concludes by conceptualising the implications regarding the emancipatory potential of the envisioned organisation of the state.

2. Methodology

The employed methodology follows the functionalist paradigm (Burrell and Morgan 1979), indicating that it does not incorporate any interpretation from a phenomenological standpoint, whether it be critical or structuralist. We deliberately refrain from conducting subjective or interpretive assessments (Gadamer 1998) of findings that are consistent with the functionalist paradigm. Using a qualitative methodology, with the theory as the main tool (Glaser and Strauss 1967).

2.1. Overview of the design

The aim of this research is to understand the messages conveyed by individuals during the Colombian upheavals of 2021, in order to determine the prefigured structure of the institutions envisioned by the people. Therefore, we present a systematic approach consisting of four steps to analyse the data, including data collection, data reduction, data display, and drawing conclusions (Miles and Huberman 1984).

The data was gathered using empirical means using participatory observation, which involved documenting messages from many sources, including both text and visuals. This article utilises ethnographic reporting to provide the pictographic material and employs a data structure inspired by grounded methodology to convey the messages. Conclusions are derived by employing communications modelling and viable system modelling. Figure 3 depicts a graph representing the applied process.

It could be argued that grounded methodology would not be appropriate for this article because we are not generating theory from the application of the methodology, yet it will be evident in this text that its use was determinant to identify the themes that are the device to interpret messages. In the following sections, we will elaborate on the methodology decided for this research.

2.2 Participative observation

The empirical research was performed the by participant observation in the location specified below, utilising a field notebook in a narrative format (Sanjek 2019) while attending the protests six times in a row in the first two weeks of June 2021. Observation can refer to a variety of strategies and procedures (Spradley 1980); the researcher's attendance at the demonstrations and participation as a spectator might classify the data gathering approach as participant observation (Adler and Adler 1994). The role of the "stranger" (Jarvie 1969), also known as the "complete observer" role (Gold 1958), describes the researchers' attitude towards the phenomenon of study. According to the authors, in this style of observation, the researcher only listens and observes while disguising his/her identity; the researcher is disconnected from the subject, allowing him/her to concentrate on comprehending the phenomenon of study.

2.3. Observation events and research location

Data was collected from the demonstrations (see Fig. 9). The observations on-site lasted between one and three hours, with an approximated average session length of one hour and forty minutes, although demonstrations lasted for up to 12 hours; data was gathered while the marches were taking place.

Participatory observation was conducted in a single research location, a park in the city centre of Pasto (Colombia); the park is a traditional 9,000-square-meter gathering place with an active day and night life (See Fig. 5 and Fig. 6).

2.4. Grounded Methodology

Observational data was sifted and shown using grounded theory (Glaser and Strauss 1967). Open coding was used for the different cultural expressions and axial coding was used to label the means of expressions, or channels (Creswell 2009). Data was collected empirically and codified in various forms (see Table 1): in verbally conveyed messages: speeches given by social leaders who, in many cases, were people who requested a platform to publicly express their ideas; in some gatherings, documentary videos were projected on walls at night (see Fig. 6); we treated these videos as speeches as well; messages conveyed in written form: in signs carried at marches and gatherings and as graffiti painted during demonstrations; messages conveyed through visual media: images and videos captured.

Table 1
Codes for the channel employed, Source: This research.

Codes.	Meaning.
[speech]	Messages were delivered through public speeches.
[media]	Messages were conveyed through audio-visual media.
[sign]	Messages conveyed through signs carried at marches, graffiti, or any other written media.
[chant]	Messages conveyed verbally, in chanting or verses.
[event]	Any action that conveys messages; also, demonstration, gatherings, marches, dances, etc.

By discovering analogous messages in different data sources, we can consider that we applied triangulation by data collection (Denzin 1970). During data collection, there was no exclusion criterion, so all messages and ideas conveyed were considered. The incidents selected for this report were chosen solely based on their frequency of occurrence. Some ideas were considered messages because we noted they guided ways of thinking; therefore, they could be considered analogous.

For data analysis, we reduced the data from narratives to first- and second-order themes and displayed them in the data structure (Corley and Gioia 2011) presented in Table 2. The units of analysis for the participatory observation were the public demonstrations occurring at the research location (Figs. 7–10), while the units of observation were the messages conveyed by such demonstrations (Sedgwick 2014).

2.5. The cybernetics of organisation

To draw conclusions, the study uses Beer's VSM theory. Beer understood cybernetics as the science of effective organisation; he proposed the Viable System Model as the way to think and organise an enterprise to ensure its viability. The cybernetic organisation of institutions is guided by the law of interrecursive cohesion. This law states that operational units are interconnected and mutually supportive, sharing identity, objectives, and resources. In Fig. 7, the squiggly line represents this relationship. It is important to mention that interventions from higher-level management will restrict autonomy because, by definition, they lack the necessary variety of skills and knowledge.

Beer also suggests that the management of variety on- the horizontal axis will yield the same outcome as depicted in Fig. 8. The consistent relationship between management and operations, as well as operations and environment, indicates that the level of variety in the environment surpasses that of operations, and the level of variety in operations surpasses that of management.

It is up to managers in both cases to adequately place regulators—amplifiers and attenuators—to regulate that interaction (Beer 1993b) to promote autonomy. The next title presents an introduction to our case study before elaborating on the findings.

3. A brief introduction to the case study

In 2019, the Colombian government proposed to Congress a reform to the educational system that aimed to stop subsidising tuition costs in public universities, provoking the eruption of protests involving people of all ages and backgrounds in major capital cities, promoted mainly by university students. The weeks-long protests disrupted mobility inside the cities and brought public education to a halt. In 2020, protests stopped because of the pandemic and the implementation of nation-wide lockdowns and online classes. But in 2021, amidst the economic downturn after the pandemic, the government presented to Congress an economic reform law that pledged to levy new taxes on the middle class.

Young people, not only students but also the growing unemployed population, minorities, colonies, groups of displaced people, urban and rural communities, social groups in general, and the more vulnerable classes in large cities, which were hit the hardest by the pandemic's economic downfall, resumed social demonstrations. Protests were characterised by marches, which were frequently accompanied by cultural events, creative expressions, and ethnic folklore (see Fig. 4). Protests displayed a heightened sense of patriotism and exhibited local cultural symbols.

This research accompanied a group of political activists who identified with anarchist ideals. Anarchism is a political theory that values self-management, self-organisation, and prefer autonomy over hierarchy, seeking individual freedom in human relationships, organisations, and groups. Although the term is often used to refer to chaos and a lack of order, anarchism seeks self-determination and the removal of hierarchy (Fiala 2021). Anarchists are frequently self-sufficient, organised in democratic and consensus-oriented organisations, and advocate for spontaneous initiative and action (Osejo-Bucheli 2023a). The anarchist collective we accompanied during the marches initially expressed those anarchist beliefs through traditional techniques such as chants, signs, and graffiti.

The sentiments conveyed by the group observed evolved over time as they actively engaged in each protest, assimilating novel concepts on the conceptualization of liberty within Colombian institutions. The following part introduces a modest expansion of Shannon and Weaver's (1949) theory that will elucidate the alterations in the messages.

4. Findings regarding the Dynamics of communication in the demonstrations

The observations showed that the messages expressed by other groups had an impact on the communications of the group under study. Additionally, the general populace did not adopt certain messages, which resulted in their subsequent abandonment. Nevertheless, a small number of those messages endured and adapted to the interactions with other messages, developing new meanings.

The model proposed in Fig. 10 is an extension of Shannon and Weaver's (1949) model. It represents two separate communication processes, each consisting of sources, messages, encoders, channels, noise sources, decoders, and destinations. The two communications are linked through one channel, which is also the noise source. The axis of symmetry of the model reflects the interactions between transmitters and the way messages influence each other. The researcher acts as the observer, interpreting all the messages.

The model used in this research demonstrates that the axis of symmetry will represent the cumulative sum of the messages retained by the researched group and other groups, both at the start and end of the observations. According to the author of this article, this can be compared to comprehending what Beer (1975, 174; 1983) referred to as "the will of the people." This study has examined Beer's concept of popular volition and Beer's application of modelling to cooperative societies in Osejo-Bucheli (2023c), building upon Walker's (1991) previous research.

5. Findings regarding content of the messages

Following the demonstrations, the notes taken were scrutinised, and recurring messages were detected and examined using grounded theory methodology. Table 2 presents the consolidation of the recurring themes identified in the messages documented. The messages were initially in Spanish and were translated for this publication. Quotation marks in the table indicate direct quotes, while longer speeches are summarised and not enclosed in quotation marks.

Table 2
Data Structure Emerging from the Findings

Second Order themes	Theme	Incident	Speech	Media	Sign	Chant	Event
Conflicting identities and autonomy	Local identities emerge in a globalising world	"Colombia: vote as Chile and resist as Palestine."			✓		
	Symbolic collective culture building	Theatrical demonstrations of resistance Musical demonstrations and concerts to reject the state's killings					✓ ✓
	Displacement and physical deterritorialization	Allusions to people moving away from farm fields to cities to find work. People stay connected to politics in their original territories.	✓ ✓				
Emergence of new political identities	Reject identity politics	"To care for the poor does not mean to be left-wing."			✓		
Dislocation of politics	Lack of trust in the government	Deterritorialization inspired distrust of the establishment.	✓		✓		
	Government ruling in the interest of a few	Imagine new nations.					
Emancipation of media and technology	Use of technology to denounce the spread state's repression	Use of YouTube and traditional media time. "They took everything away from us; they took so much that they took away our fear."			✓		✓
	Distrust of mainstream media	"You won't see this in [state-controlled media name]."	✓		✓		
Use of culture and art in institutional change	Abandonment of traditional culture and adoption of a cosmopolitan one	The displaced take their culture with them to the cities.		✓			
	Representation of media constructions Fantastic representations of the deterritorialized	Ideas and images in the media are guides for uprisings. Chile, Hong Kong, and Myanmar. Images of drug cartels portray an image of success in movies.	✓	✓	✓		
	Languages elicit translocal solidarities	Language is a motivator for emancipatory movements to become antinational.	✓				
	Display of traditional customs	Displaced populations march Communal Cooking <i>Meengga</i> gatherings					✓
Denationalization of autonomy	Demand for equal treatment in rural areas	Policies affect small towns and rural areas, lack of government presence, and war. Denunciation of violence in towns, war and paramilitary activity.	✓ ✓	✓			
	Defence of ecology	"We look for the turn-on dignification of human life in harmony with nature." "Reject fracking; reject deforestation."	✓ ✓				
	Representation of state functions	"The Cimarron Guard acts as a Mechanism of Protection and Friendly Composition." "Defend education, defend culture, and defend territory"	✓			✓	
	Requirements of taking state control to the local level	"We demand negotiations to stop the uprisings to be held at the local level."	✓	✓	✓		

Source: this research

Second Order themes	Theme	Incident	Speech	Media	Sign	Chant	Event
Universalization of human rights	Defense of human rights	"Today we march for Dylan Cruz, tomorrow we might march for you."	✓	✓	✓	✓	
		"We demand the protection of lives of social leaders."					
	Access to free education and health services	"We demand the implementation of the agreements reached with student representatives in 2019."	✓		✓		
		"Why do you fear educating the lower classes?"	✓		✓		
		"High-quality, free education".					
	Vindication of the dignity of ethnic minorities	"The indigenous movements increased the contagion of dignity."	✓			✓	
		"We demand the implementation of the peace agreement; stop the killing of indigenous leaders."				✓	
		"Indigenous people have no voice."					
	Racial equality and opportunity	March of afro descendants					✓
		March of indigenous communities					✓
<i>Source:</i> this research							

The next title analyses the results presented in Table 2 using Beer's socio-political cybernetics.

6. The prefiguration of institutions in Colombia, a country in torment.

Each subsection of this section briefly discusses the themes presented in Table 2, then makes an interpretation of those findings according to Beer's socio-political cybernetics to finally propose a solution to the issues detected using the same approach.

6.1. Conflicting identities and autonomy

The findings pertain to the acknowledgment of emerging, specific, and regional identities. Simultaneously, a unified and all-encompassing national identity was forming, which incorporated the identities of the populations uprooted by the civil war. These identities were strengthened by comparing them with acts of opposition in different geographical regions.

According to Beer identity refers to the unique characteristics and attributes that distinguish an individual from others (Beer 1975, 441); it can be defined as the relationships between the processes embodied by the various parts of a system that maintain a coherent and continuous sense of self (Beer 1993b). Systemic identity refers to the intricate self-recognition ethos of these units, which is shaped by various components and influenced by the interactions between the observed system and its multiple environments (Beer 1993b).

Nevertheless, the concept of identity is challenged by the diverse aspects of a nation and its locations, as identity is explored in relation to different societal units, such as villages, companies, states, and humankind as a whole (Beer 1993b); furthermore, "the nation resists the attempt to define its identity simply in terms of gross national product, particularly when this is underwritten by 'funny money' generated between international exchange operators, and especially when what remains of value is inequitably distributed."; so, internal conflicts are expected due to the impossibility of managing the variety of identities. A paradigmatic example of a deep disparity in identity was the case of Yugoslavia, whose identity was held together under Tito's rule, while the discovery of autonomy by its people prompted the disunity and fracture (Beer 1993b).

According to Beer's socio-political cybernetics, to prevent an institutional collapse similar to what happened in Yugoslavia, a country must enhance its national identity and introduce goals that go beyond just the economy. Alternatively, it can provide a solution to reduce autonomy in the subsystems (Beer 1993b). Although Beer would have preferred the former option, the latter is the current situation in most countries worldwide. In the following title, we will further discuss how to manage variety in political identity identities.

6.2. Emergence of new political identities

The findings show that people in the Colombian case rejected identity politics, expressing that running the country is not a matter of defining left or right politics but a matter of forming a government that cares for its people.

Beer also saw this pledge for a new kind of politics; he thought that we should utilise love, compassion, joy, and knowledge, which are inherent in us, and reclaim our heritage, requiring change (Beer 1993, 43). He acknowledged the need for a new breed of politician or statesman motivated by

compassion and formed in democracy, management, and science (Beer 1993, 43).

He saw the Chilean experience as an example of such motivation. It began with a democratically elected government that transformed Chile into an experimental society; it first started by caring for the disadvantaged by implanting agrarian and industrial reforms, making food and clothes available to the poor, which led to a surge of enthusiasm for the Chilean experiment, which paved the way to the upcoming technological change in the economy of the country (Beer 1993, 43).

6.3. Dislocation of politics

Section 5 presented the findings of a lack of trust in the government; this can be interpreted in two ways: first, the recognition of the impossibility of the government for adaptation, and second, the apparent decision-making in favour of a few. Both interpretations are developed next.

Socio-political cybernetics would interpret the messages recorded in Section 5 that demonstrate a lack of trust in government as a recognition of its inability to meet the challenges of the changing environment in an adaptive manner. The static nature of government and its unadaptiveness are due to the lack of recognition of its stable state and its inability to handle excess variety (Beer 1993, 15); in contrast, institutions that enshrine society's values have proven to survive and adapt to change; a more nuanced approach is required to attend tarnished institutions (2-3).

Another idea that emerged in the empirical part of this research is the notion that government rules in the interest of a few and the possibility of institutional failure by dishonest management. According to Beer, issues like the loss of privacy, bad credit, blackmail, and problems with urban planning are some of the challenges that governments usually try to stop, whether they come from private parties or the government itself (Beer 1993, 26). Furthermore, technocrats are particularly likely to manipulate developing nations (27). In general terms, the risk of the misuse of technology by a despotic government or unscrupulous management is always persistent (12). The cybernetic explanation for the emergence of this sort of problem is the inability of the government to handle variety, and education and communications limit variety instead of promoting it (27).

Beer attributes this lack of variety management by government and other institutions to the lack of regulators that contain a model of society (Beer 1993, 12); democracy has established the means for handling variety, such as shared beliefs in constitutional agreements (39), or the democratic control on the policies that guide the operation of a state (10); is for this reason that any threat to democracy is oppressive (41). Nevertheless, the occasional democratic exercise of voting is insufficient for increasing variety, also, the passivity of society regarding democratic participation has robbed itself of its capacity for regulatory variety (42).

The solution coming from socio-political cybernetics is that people themselves should take control of their nation through the joint use of management, science, and politics to enhance freedom (Beer 1993, 10). The application of science to societies' democratic processes means furnishing them and their governments with new channels of communication (27). "If the democratic process does not seize upon and use those disregarded tools of modern man, it will not itself be viable much longer." Beer says (39).

The people should redesign the institutions of government in the principles and practice of cybernetics (Beer 1993, 19); the economy would work like our own bodies, with nerves extending from the governmental brain throughout the country, accepting information continuously, in a real-time control system (17). A cybernetic model that has a central regulatory model created by democratic consultation should also be put into use (34). This model will not increase expenses over the current model of bureaucratic investment; "freedom could be reclaimed, using the new scientific tools at our disposal, but only if new democratic machinery is established to replace existing bureaucracies." (35).

The tools of the modern man are the computer, telecommunications, and the techniques of cybernetics. Institutions decide to disregard these tools, and it is in the interest of society to use them to redesign those institutions (Beer 1993, 11). Democracy can be enhanced by installing a public computer to handle variety, a democratic elected government should build in open view using legal safeguards (14), the computer does not threaten our freedom, cybernetics is not a tool of the devil, real-time governmental regulators are not dangerous to employ (25), the public computer will observe continuously the time trends in the form of rates of change, gradients, step functions, and such, of society and economy; this form of control is necessary because we, as government, have to look to the interactions of dynamic systems (16), this will facilitate us, as the people's government, to decide the most effective and efficient intervention policies, and foresee societal threats to freedom (18).

6.4. Denationalization of autonomy

The observations revealed that individuals perceived distinct treatment between populations residing in rural areas compared to those in urban ones. Additionally, there was a simultaneous perception of differential treatment between those residing on the outskirts of the country and those in the capital and major cities. An indication of this is the inadequate defence of the environment as perceived by the public when it is carried out from the nation's capital. Instead, this responsibility should be entrusted to the individuals residing in natural reserves. The collective desire of the population in relation to that scenario can be succinctly expressed as a demand for self-governance, transferring it from the jurisdiction of the state to that of the province.

Beer interprets the events witnessed in Colombia as the government's incapacity to handle the variety of the state, and the fact that "any oligarchy that has the power to enforce its ideology will quite predictably rise to triage" for decision-making (Beer 1993b).

the state is the result of a system consisting of a nation, a territory, and a government, it can be understood as the performance of institutions (Beer 1993, 3). The government models the state in departments to manage its variety; these are the institutions; this way, the government can handle large amounts of variety by reducing it in sections. Nevertheless, those same departments contribute to filtering and delivering unmapped variety to the government (15), provoking a disregard for factual evidence and the disattention to the needs of some while attending to the needs of others. In a departmentalized government, variety is managed through four distinct approaches: first, models are made in every department; second, the government creates new departments to handle variety; third, when data covers extended periods, these are aggregated; and fourth, the collection of information is delayed (15–16). As a result, freedoms diminish when variety is attenuated, because no electorate is consulted on the methods of reducing variety.

In a triage, decisions are made based on the priorities dictated by the ideology of the small number of those already in power. This is a constant both at the national and supra-national level. National sovereignty is ceded to supra-national blocs, and smaller nations find their affairs constrained by the big powers. (Beer 1993, 15); and wealthier regions dominate the policy of the whole country, including the less prosperous ones. And in the same fashion, “the rich world would not allow a poor country to use its freedom to design freedom” (43); the wealthier regions will impose their convenience in state administration. In turn, sovereignty is bypassed by the world view (15), and local autonomy is dimmed to elevate centralization.

Beer would propose to Colombia that it should address the autonomy of institutions by applying socio-political cybernetics. He observed that improperly installed central amplifiers and poorly installed peripheral attenuators are symptoms of mismanaged autonomy, which makes the system’s parts perceive they are centralised (Beer 1993, 32); this would explain the feelings this research documented in the Colombian case. Beer also observed that local administration centres like health centres, which are run by computers, are more efficient than the hierarchical government (284); so, he would have suggested building a governmental brain throughout the country and placing a control room fed with teleprocessing interfaces (17). This computational and telecommunicational system and control room in Colombia would require the inclusion of two models (Conant and Ashby 1970), one for the control of the identitarian variety of the country and one for measuring well-being generated by the implementation of governmental policies. The first would be a model of Chronic Societary Triage (Beer 1993b) that establishes a learning system that transforms a controlling ideology into policies while constantly learning from experience, and the second would be a model of Negeudaemony that allows institutions, as service providers, to measure the frequency of negative eudemonic response in the population that receives the service (Beer 1975, 168–178). Both models would aid a government in handling variety more effectively and produce a relaxation time shorter than the time between shocks and instability sets in (Beer 1993, 15).

The first model is the model of a Chronic Societary Triage, presented in Fig. 11 cues from the operational units of the VSM presented in the methods section of this article. The model shows a partition containing a metasystem and an operational unit composed of management, operations, and the environment. In this model, the sole piece of information provided by the metasystem is the controlling ideology, and it assumes that the operational units hold increasing variety in their ideology, as it happens in the Colombian case with the central government (Metasystem) and the regions of the country (operational unit); the whole set of operational unit and the part of the Metasystem dedicated to this unit will be called Category A. In the model, the letter v stands for a constant representing the (low) variety measure of the controlling ideology i , therefore $v(i)$. The A-categorical partition shows a variety of the same controlling ideology with the modifier x . The variety of the activity regulated must be higher than that which the management itself has available; call it $2v(x)$. The variety of the environment, in turn, must be higher still higher; let us call it $3v(x)$ to be consistent with a Fibonacci series: {1,1,2,3,5,8...} because this is the common growth progression in biological systems. To adhere to Ashby's Law of Requisite Variety, it is necessary to build regulators for amplification and attenuation. The figure uses conventional electrical engineering symbols to represent the equivalent of variety. T stands for the transformation generated, which is the amplification of variety in one direction and the reduction of it in the other $v(x)$. The two metres used to measure approximate equality (\approx) serve as an indicator of the equilibrating process, which feeds into a comparator measuring error e and produces a feedback function $f(e)$ for the management box. Category A is defined as matching the controlling variety of the ideological paradigm. The effect of the feedback, then, is to constantly reinforce the identity $v(x)$, stabilise the complexity that the ideology recognises as the quantity v , and reaffirm the qualitative x -ness of A. This should have the outcome that the management box learns ever more effective ways of managing homeostasis. This means, in practice, the continuous adaptation of design in the amplifiers and attenuators at P and Q , thus completing the learning loop (Beer 1993b).

The second model that the Colombian government should install is the Negeudemonic model, which measures society's functions, treating it as a complex learning system, as presented in Fig. 12. The system functions by adjusting service, as informed by a feedback signal $f(e)$, informed by the error () detected by comparing the service standard (ss) of the current service with the formal standard (fs). The formal standard (fs), in turn, is generated by a hidden standard (hs), which is the product of the error measured by the comparison of the Eudaemonia produced in the current time (E_t) by the provision of the service and the previously recorded knowledge of Eudaemonia at an earlier time, E_{t-1} . The adaptive controller, the error () feedback signal, has the ability to function in order to move fs closer to ss. This research has explored a more nuanced version of this adaptive controller setup applied to the metasytemic function of cooperative societies in previous publications; see Osejo-Bucheli (2023c). The implementation of this model allows for the continuous adjustment of the quality of the service to ensure the highest eudaemonic output possible in society.

6.5. Emancipatory potential of media and technology

The Colombian instance demonstrated a surge in the utilisation of open-access television platforms like YouTube, where individuals who took part in the protests documented the events occurring on the streets. Furthermore, the local television networks provided coverage of the events that presented a contrasting narrative to the prevailing news outlets. Those circumstances provided the public with an alternative perspective on the events that happened during the protests.

The events in Colombia can be understood, according to Beer, by examining how technology and media have influenced the transformation of the institutions of a country. The utilisation of "the tools of the modern man," such as electronic computers, telecommunications, and the techniques of cybernetics, can lead to the enhancement of institutional performance (Beer 1993, 11). In Chile, the Cybernet project (see Fig. 13) facilitated institutional restructuring by establishing a telecommunications network that interconnected the socio-industrial sector of the country (311). Telecommunications may be utilised to influence public opinion, as discovered in Colombia, and to enhance the trustworthiness of government initiatives, as predicted by Beer (1972, 314), due to their ability to reach a wide audience (8).

In Beer's human nervous system-like vision of the state and its institutions, he envisioned television to be a sensorium in a communication model (Beer 1972, 39, 44); television could be used to place algedonic participation metres, where politics and policy could be discussed, evaluated, and eventually approved by the people (281–284). In his vision, media can be used as a variety regulator (335), either as an amplifier or an attenuator of variety, to influence or even shape the perceptions of the public (Beer 1993, 14). As a matter of fact, he pointed out that dictatorships use it to greatly amplify extremely low variety (Beer 1993b). It is for this reason that he placed media communications at the centre of his model (see Fig. 13).

The use of alternative media outlets was done by the people in Colombia in a decentralised, self-organised, spontaneous manner, unlike Beer's experience in Chile, where there was a teleological intention behind it. Perhaps that is the reason why institutional redesign never materialised in the Colombian case. Beer proposed a network of communications that connected the government and the people and used telecommunications and a public access computer; that initiative was never applied in Colombia, despite the proliferation of computer terminals and the interconnectedness of modern-day telecommunications, which suggest the necessity for a teleological initiative behind decentralised administration and eudaemonic measurement.

6.6. The use of culture and art in institutional change

Our research showed that during the demonstrations, people displayed images of new ideas about institutions using cultural artefacts and artistic representations to demand change.

Socio-political cybernetics encounters a comparable obstacle: the universality of cybernetic rules surpasses cultural and state limitations, facilitating cognitive processes and comprehension. However, cultural factors hinder our recognition of the systemic structure of the world. The objective is to utilise universal scientific principles to modify institutions, with the aim of restructuring them by giving precedence to intellectual liberty rather than adhering to cultural limitations. Beer believed that existing institutions frequently disregard the distinctiveness and autonomy of individuals. He expressed that our culture instills in us a tendency to conform intellectually rather than to exhibit intellectual boldness. (Beer 1993, 1–10) Consequently, a shift in culture was imperative to initiate institutional transformation; such change should come through cultural and educational sensibility.

Beer encountered this difficulty during the transformation of Chile, and as a result, he put forth the model depicted in Fig. 13. The diagram illustrates the proposed institutional change in both the economy and society. The left half of the diagram represents the five principles of change, which are closely associated with the five subsystems of the Viable System Model (VSM). These principles were widely disseminated through various forms of artistic expression, such as songs, booklets, paintings, posters, and slogans. On the right side of the diagram, economic change was promoted through educational initiatives and training courses, facilitated by documentary films and state television.

6.7. Universalization of human rights

The final discovery in this research is the universalization of human rights. One of the strongest calls was the demand to access free education and health services; we must also remember that, as we mentioned at the beginning of this article, this was the detonator of the Colombian 2021 uprisings. This research found a demand for the protection of the right to life, e.g., the display of theatrical plays portraying images of the Colombian civil war (Fig. 14). And I discovered in the messages presented during the marches the vindication of ethnic minorities and the demand for racial equality. Some examples of that can be the display and general adoption of African American music and dance, as well as the presentation and widespread use of Native American rites (Fig. 15).

Socio-political cybernetics studies the conflict between the functioning of the social metasystem and the maintenance of personal autonomy in individual rights. Rights are derived from the institutional and personal positions individuals hold within a society (Beer 1975, 317) and frequently engage in contradictions amongst themselves that should be counterbalanced by the operation of the metasystem (233). The pursuit of individual rights and decentralisation is a commendable objective (414), even after 750 years have passed since King John signed the Magna Carta (Beer 1993, 31). An indication of the limited variety in governance is its inadequacy in addressing ethnic issues, stemming from the reliance on economic frameworks that inherently lack sufficient variety (Beer 1975, 238).

Also consider education as an illustrative example; if education is effective, it serves as a catalyst for variety (Beer 1993, 8), developing students' skills and abilities; the process of education restricts variety by imposing a standardised pace and uniform evaluation, diminishing the potential of the pupil (25) by reducing alternatives (27). Beer's conclusion is that we no longer have control over education (25) and understanding education from its etymological roots, which refer to the process of extracting knowledge rather than imposing it (Beer 1975, 25, Beer 1993, 35).

The proposed solution would entail self-organisation. A community should possess the liberty to organise and control all its social services, whereas students should possess the independence to govern their own studies throughout their entire lives (Beer 1993, 34), and educators are responsible for restructuring educational institutions (43). To address the issue of education, it is imperative to examine the instruments available to contemporary society, namely the advancements in computing and telecommunications. The current delineation of governmental branches necessitates a comprehensive use of educational tools; education should not be confined to a singular discipline as the demand for education is ubiquitous (Beer 1975, 30); due to this, education necessitates a metasystem of a higher order than the current one (226), one that encompasses the widely present educational and training needs. Present-day education inadequately addresses the requirements of the modern era. It particularly lacks the capacity to leverage current technology opportunities (140); telecommunication provides sufficient bandwidth to deliver the necessary variety for a customised educational system (Beer 1993, 26). This alternative would enable us to present a form of education that is voluntary in both its content and process (1). Through voluntary participation and leveraging advancements in computing and telecommunications, we can create a comprehensive and personalised educational system that addresses the needs of the modern era.

7. Discussion

The article set to identify the envisioned characteristics of the society people communicated during the Colombian uprisings of 2021, based on the observations in a city in Colombia.

We have categorised our findings into five distinct second order-themes. These themes revolve around the people's perceptions of the country's political identity, the utilisation of technology during the uprisings to advocate for institutional change, the influence of art, culture, and media in the uprisings, the demand for regional autonomy, and the aspiration for human rights; all these findings describe the governments lack of necessary variety to manage the decentralized identity of the Country's regions.

The study utilised socio-political cybernetics to analyse the demands and provided an interpretation of its findings. It also recommended a solution based on socio-political cybernetics and the Viable System Model (VSM). Although the Viable Systems Model may not be explicitly mentioned as a unified concept in this text, its ideas are extensively included in a manner similar to how Beer (1975, 1983, 1993, 1993b) applies them.

The report's most significant result, which we detailed in sections 6.1, 6.2, 6.3, pertains to the shifting nature of political identity in the country. Beer (1993b) already predicted this discovery, suggesting a method for effectively handling variety in identity. The significance of this discovery is noteworthy, since it appears that political identity plays a crucial role in shaping the structure of the system (Osejo-Bucheli 2023e).

In section 4, the article suggests an update to Shannon and Weaver's (1949) communications model, which incorporates an open channel, misunderstanding of the messages, equivocation, and feedback. The interactions between messages gave rise to an evolutionary connection in communication during the marches, which played a crucial role in identifying the transformative power of communication, as emphasised by Beer (1972, 319).

In section 6.5 of the article, the analysis focuses on the role of communications in the transformation of a nation's institutions. The report observed that the use of media for this objective in Colombia aligned with its usage in Chile (Beer 1972, 319). It is important to highlight that in Colombia, the use of media was spontaneous, whereas in Chile, it was a deliberate aspect of the country's planned transformation.

The prior findings also indicated that the "tools of the modern man" stated by Beer (1993, 39), namely the computer, telecommunications, and cybernetics, which were highly advanced technologies in the 1970s, are now accessible to nearly everyone, and have been accessible for a minimum of two decades, no nation has implemented and employed them on a nationwide scale. This presents an intriguing study opportunity: investigating the potential applications of a nationwide computer and the underlying reasons for its current lack of adoption.

A cybernetic recommendation for the country's organisation would involve establishing a mechanism to quantify the level of eudaemony, as discussed in section 6.4. This concept, along with certain suggestions for enhancing the existing model found in the scholarly literature (Osejo-Bucheli 2023c), could serve as a promising foundation for Beer's vision of a technological democracy.

Declarations

8.1. Ethical Approval

This research does not report any experiments on human or animal subjects; it does not require the approval of an ethics committee. The research reports research performed on large public demonstrations and does not report on personal or group private data, so it does not require the consent

of any research subject. The research does not contain any personal information that requires consent to be published. Some of the images that appear in the article do require publishing consent, and the personally signed permits by the authors were submitted to the journal.

8.2. Funding

This research did not receive any funding.

8.3. Availability of data and materials

The original raw data, unedited tables for this research could be accessed by requesting them to the author of the paper.

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Figures

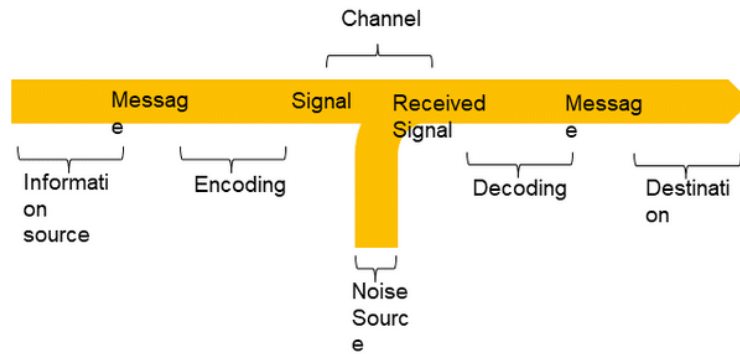


Figure 1

Shannon and Weaver (1949) communication model, Source: Shannon and Weaver (1949).

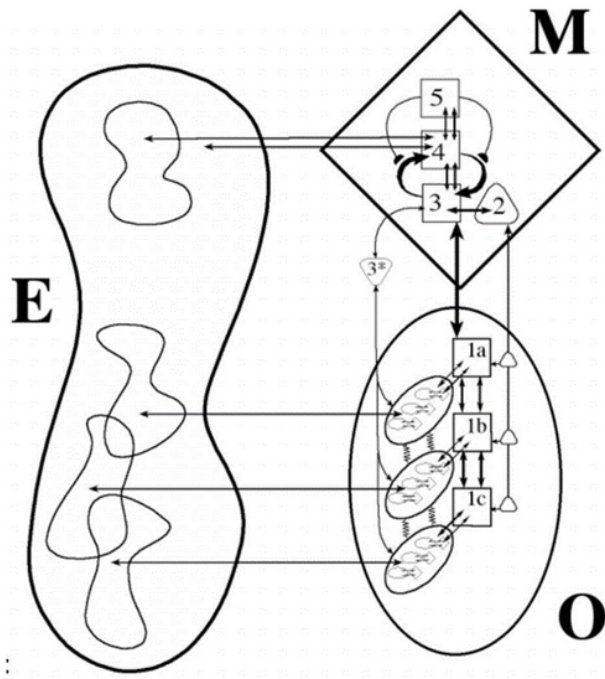


Figure 2

simple VSM depiction. Source: (Espinosa, Walker and Martinez-Lozada 2023. Vol. 3

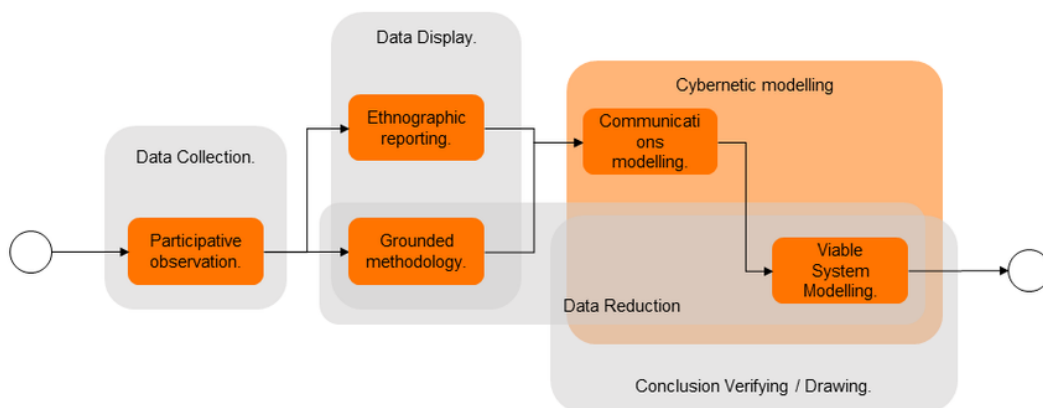


Figure 3



Figure 4

Indigenous and patriotic display of dances during the demonstrations in Pasto Colombia 2021; Source: Photography by J. Polo, Colombia, June 2021, reproduced with permission of the photographer.



Figure 5

Aerial view of the research location; Source: Alvarez (2018)

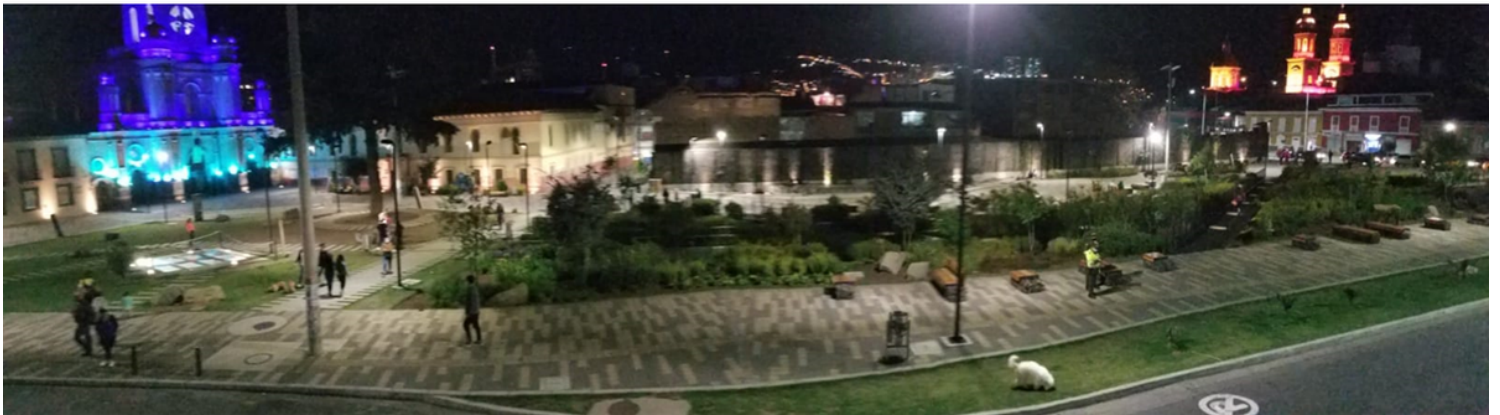


Figure 6

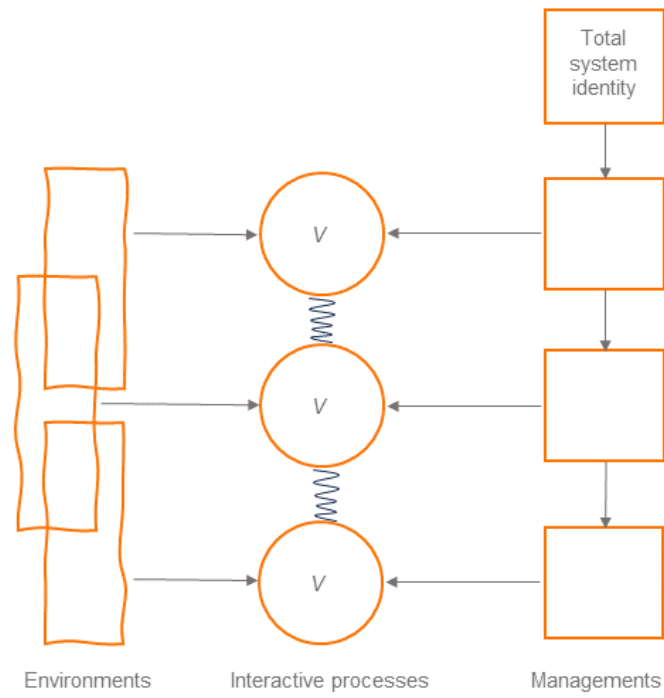


Figure 7

Vertical variety management; Source: (Beer 1993b)

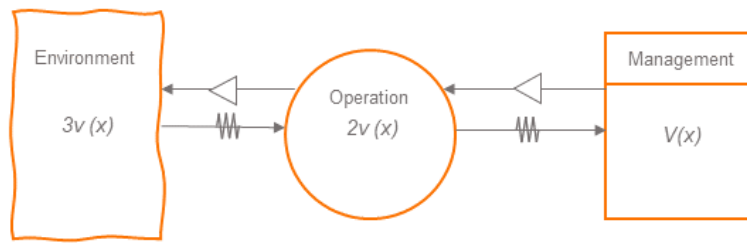


Figure 8

Horizontal variety management; Source: (Beer 1993b)



Figure 9

Large Demonstrations and Protests in Parque Ambiental Rumipamba Pasto 2021, Colombia; Source: this research

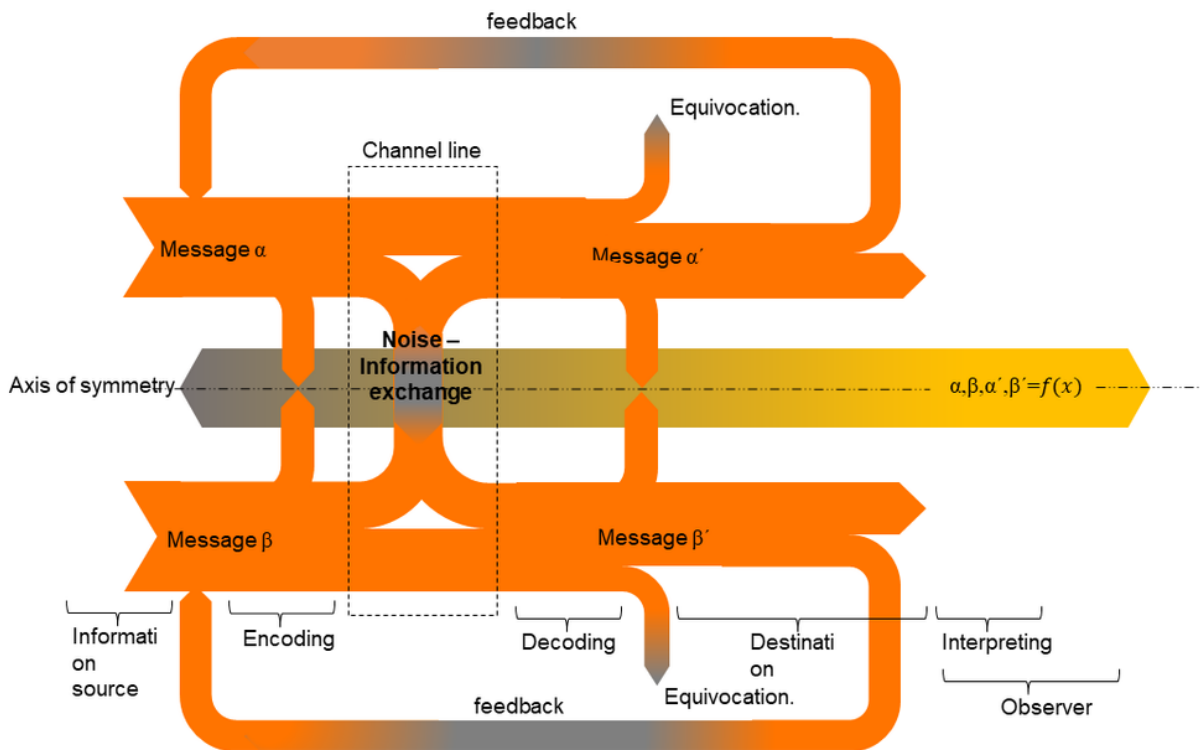


Figure 10

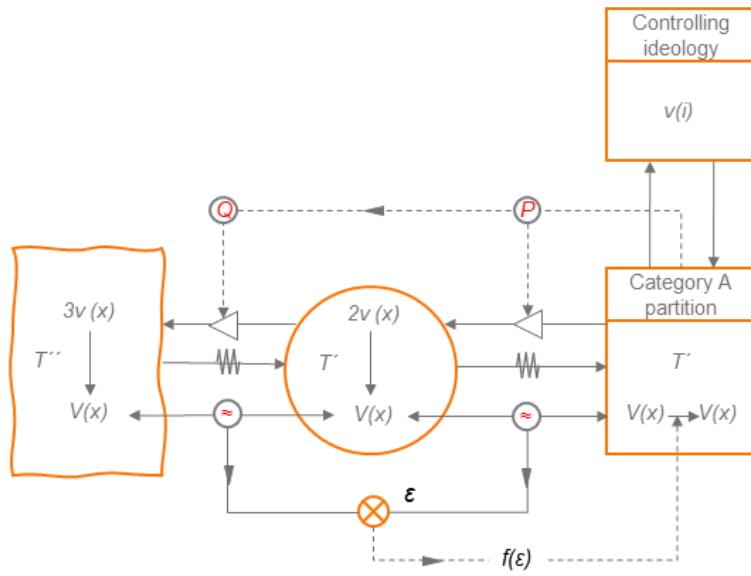


Figure 11

Model of Chronic Societary Triage; Source: Beer (1993b)

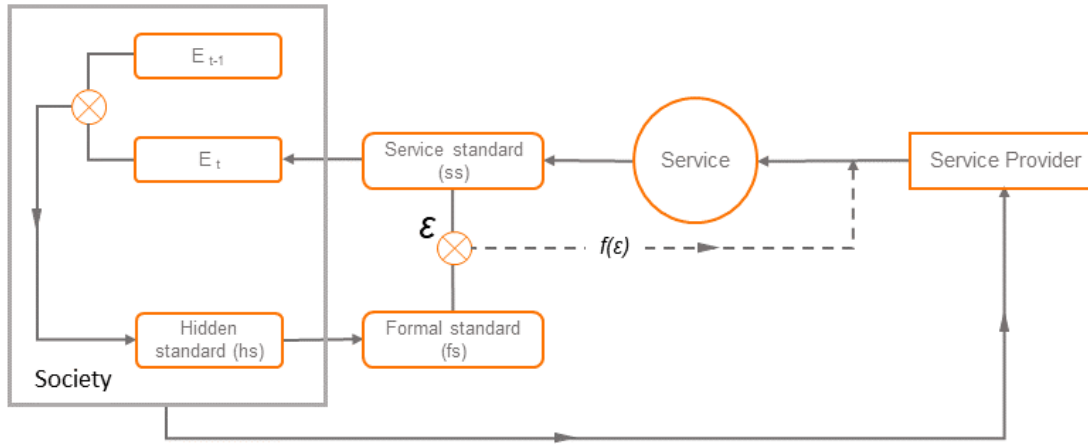


Figure 12

model of eudaemonic measure; Source: Osejo-Bucheli (2023c) adjusted from Beer's (1975) idea.

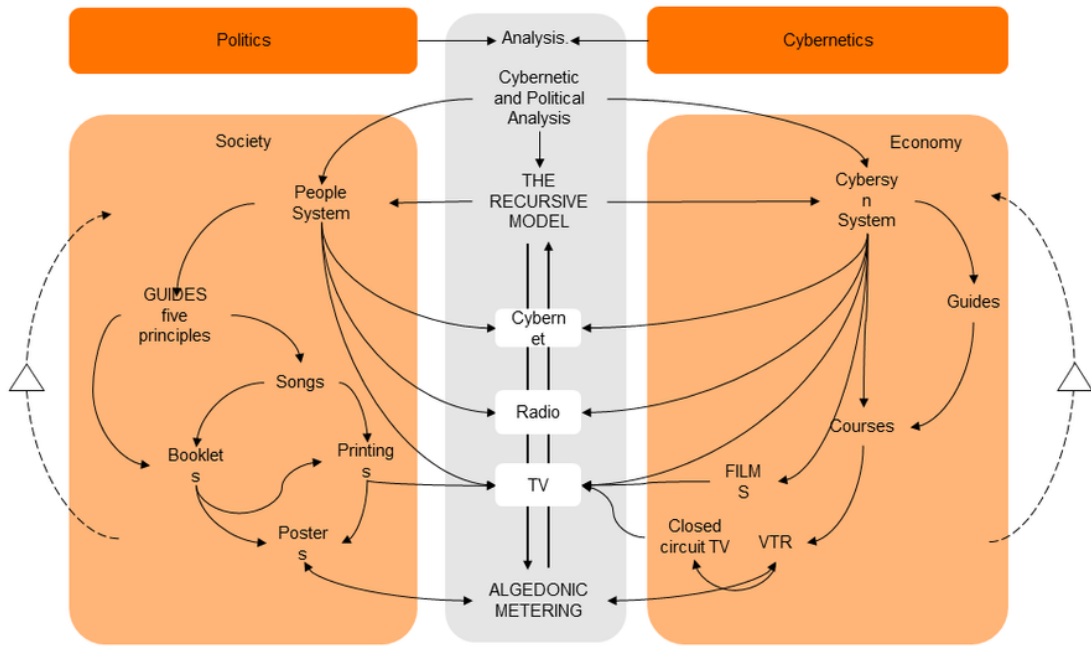


Figure 13

Socio-political change in Chile; Source (Beer 1972, 319).



Figure 14

Iterant theatrical plays in the marches; *Source:* Photography by J.C.Figueroa, Colombia, June 2021, reproduced with permission of the author.



Figure 15

Communal Mandala in front of a church during the uprisings; *Source:* Photography by J.C.Figueroa, Colombia, June 2021, reproduced with permission of the author.