



# **A brief sketch of three models of democratic economic planning**

ISSUE 2

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# A brief sketch of three models of democratic economic planning

## Abstract

Between 1988 and 1993 three models of democratic economic planning were designed by Pat Devine (joined later by Fikret Adaman), Michael Albert & Robin Hahnel and Paul Cockshott & Allin Cottrell. These three models are called negotiated coordination, participatory economics and computerized central planning. They are still at the center of the discussion about what a postcapitalist economy should look like. The goal of this research note is to give a short but clear presentation of their main institution and their functioning. A diagram of each model's annual planning and a detailed glossary divided by model accompanies the presentation to make the argument clearer. We abstained to relay or formulate any criticism of the models and only tried to present them as clearly as possible. To our knowledge, this is the first publication presenting the three models' side by side.

**Keywords:** democratic economic planning, postcapitalism, negotiated coordination, participatory economics, computerized central planning, Pat Devine, Fikret Adaman, Michael Albert, Robin Hahnel, Paul Cockshott, Allin Cottrell.

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Getting out of capitalism implies finding desirable and functional alternatives to replace it. Although this might look like an obvious statement, only few proposals are put forth on how a postcapitalist society could work. Amongst those proposals, democratic economic planning stands out in its attempts to reconcile the need for broad coordination and the preservation of local autonomy and self-determination. Our goal in this text is to lay out what we consider the three main models' functioning in order to give a quick overview of them to a broader public. Laying out these three models of democratic planning in a concise and structured manner would too allow us to discuss and criticize them in further writings.

It is no coincidence that these three models were published at the turn of the 1990s. The era was marked by the collapse of the Soviet regime and the end of the Cold War. The ideological victory of capitalism took with it a large part of the legitimacy of the socialist option in the countries of the West. These models are thus to be understood as a response to the failure of both central planning under "really existing socialisms" and monopolistic market coordination under capitalism.

Let's have a quick look at them.

## 1. Devine & Adaman's coordinated negotiation

In 1988, the English economist Pat Devine published *Democracy and Economic Planning* he dubbed his model "negotiated coordination." Later on, he improved and discussed his project in articles written with the Turkish economist Fikret Adaman, his student that became his main cowriter on this matter. Two fundamental principles are institutionally embodied in negotiated coordination. First, it strives to maximize participation on the part of everybody affected by a given economic process. Second, it supports a division between market exchanges and market forces.

### Participation through representation

Negotiated coordination makes participation possible at various levels of society, and major economic decisions should be taken according to the subsidiarity principle. Subsidiarity enables all the social owners' knowledge to be used so that those who are proportionately affected by decisions take them according to their preferences and interests (Devine 2019, 58). Devine tells us that this principle will promote locally-based economic activity and shorter production circuits, thereby reducing ecological damage (Devine 2017, 43).

Devine keeps the idea of a representative government elected by the people and law-making within a Representative Assembly, but with genuinely participatory political parties and a much more democratic electoral system (Devine 1988, 189-90, 212-13). The equivalent of enterprises, what he calls production units, are owned collectively. Representatives from four sectors sit on the decision-making body of

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each production unit: the general interest (national, regional and local Planning Commissions and Negotiated Coordination Bodies); the interest of consumers, users and suppliers (consumer associations, government and public services, production units that buy from or sell to the production unit and other Negotiated Coordination Bodies related to the production unit); the interest of workers (workers of the production unit itself and their unions); and the interest of the community (interest groups and activist groups) (Devine 1988, 226). These representatives then agree on the most appropriate use of productive capacities through negotiation, considering each other's interests. These governing bodies decide on the general administrative orientation of the production unit, while workers organize the day-to-day operations through self-management (Devine 1988, 227-28).

On economic issues, the Representative Assembly receives a series of national plans designed by a Planning Commission. These national plans establish national investment priorities, the resources (including money, goods, and services) offered for free to those who are not working (the young, the sick, the elderly), "primary input prices" (wages, energy, natural resources), means and levels of "taxation" and the public services offered by the "social bodies" of the government directly to households (Devine 1988: 193).

A Chamber of Interests – a group of people representing different sections, causes, and interests of society – first reviews these plans and presents a report to the Representative Assembly on what elements civil society agrees or disagrees with. After extensive public debate, the Representative Assembly selects a single plan and adopts it. Production units offer their

goods and services on the market at a price that equals the production cost, which is the sum of the primary and intermediate inputs (supply, infrastructure, parts, repairs, etc.) (Devine 1988, 197-203). This price does not vary directly according to demand, but only indirectly "when returns to scale are variable rather than constant" (Devine 1988, 243).

Through self-management, workers will have, during their work life, the opportunity to do a variety of tasks that are unskilled and repetitive, skilled, nurturing, creative and are related to organizational planning and management. According to Devine, this repartition will significantly reduce inequality in the social division of labour (Devine 1988, 174-79). A central aspect of democratic economic planning is that workers control their own activity and society's general direction. In other words, formalizing a task rotation involves a redistribution of decision-making power to the workers, something that was previously captured by the economic and political elite in previous systems, whether capitalist or central planning.

### **Market exchanges and market forces**

Although production units are self-managed, their decisional power is limited to the capacity of their existing infrastructures. They cannot choose to invest in new assets or close facilities by themselves. Here lies the difference between market exchanges and market forces, a central element to the negotiated coordination process. Market exchange gives consumers and entrepreneurs a means of transmitting valuable information (i.e. preferences) through selling and buying at given prices. Negotiated coordination includes market exchange and day-to-day production can therefore adapt to market signals. However, negotiated

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coordination rejects what Devine calls market forces – making investment choices that follow the logic of value accumulation. In negotiated coordination, it is not the capitalist who makes investment decisions through an atomistic, *ex-post* coordinated process that aims for profit maximization. Instead, it is the social owners (all the affected parties) that take investment decisions through an *ex-ante* negotiated coordination process aiming to fulfill collectively decided social objectives (Devine 1988, 236).

Indeed, when collectively owned self-managed production units want to make changes to their productive capacity (like building a new facility or investing in new technology development), a demand must be made for the next planning cycle. In the next plan allocation process, the Negotiated Coordination Body will review and approve them in light of what other production units are doing. Everyone affected by the sector sends a representative to the Negotiated Coordination Body: production units of the sector, obviously, but also suppliers, consumers, government, and interest groups from civil society. Based on the National Planning Commission projections and the Representative Assembly's national priorities, the Negotiated Coordination Body tries to establish the best investments for its sector after considering the demands of the various production units (Devine 1988, 237-38).

The way negotiated coordination uses knowledge seeks to involve workers and every other part of society affected by the planning

process is essential for Devine and Adaman. It allows them to answer the Austrian argument about tacit knowledge in the socialist calculation debate<sup>1</sup>. Tacit knowledge is a form of knowledge that is practical, local and not transmissible as quantitative information. Simply put, tacit knowledge comes from the fact that “we can know more than we can tell” (Polanyi 2009, 4). The Austrian argument (Hayek 1945) says that those who hold that local knowledge should take the economic decision and that central planning cannot access this knowledge and, therefore, will always be inefficient. For Devine and Adaman (1996), putting representatives of those affected by the economic choice in the investment (Negotiated Coordination Body) and the day-to-day (Governing Bodies) decision process puts their tacit knowledge back in the decision process without needing to transform it into quantitative information that is sent to a Central Planning Bureau.

As mentioned earlier, in the negotiated coordination model, the means of production are owned collectively, except for very small-scale initiatives that are co-ops owned by their members or are self-employed initiatives. However, Devine proposes to collectivize them as soon as they grow (Devine 1988, 129-30). Society, as a whole, therefore, owns the means of production and lends them to production units. The latter must make effective use of those means. Therefore, the Representative Assembly, helped by the Planning Commission, sets a rate of return that infrastructure use should generate and transfer to the

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<sup>1</sup> The debate was about the technical possibility of planning a complex modern economy. The debate was between two camps. The first, composed of economists from the Austrian school (mainly Friedrich Hayek and Ludwig von Mises), rejected the possibility

of rationally calculating economic activity through central planning. The second camp, composed of socialist economists, defended this possibility. See Devine and Adaman (1996) for further readings.

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government. Production units should reach the set rate of return or otherwise provide a justification that they should be “subsidized” by the rest of the economy. To prioritize the best use of resources, the rate of return also guides the Negotiated Coordination Bodies when deciding which production unit to invest in. The rate of return can differ from one production unit to another for three reasons: (1) reasons within the control of the production unit (like wage, prices, working conditions and work organization), (2) reasons beyond the control of the production unit (like location and fashion) or (3) reasons related to the macroeconomic situation that concerns a whole branch of production (like the fall or rise of demand for this type product, significant technological or social changes) (Devine 1988, 245-48).

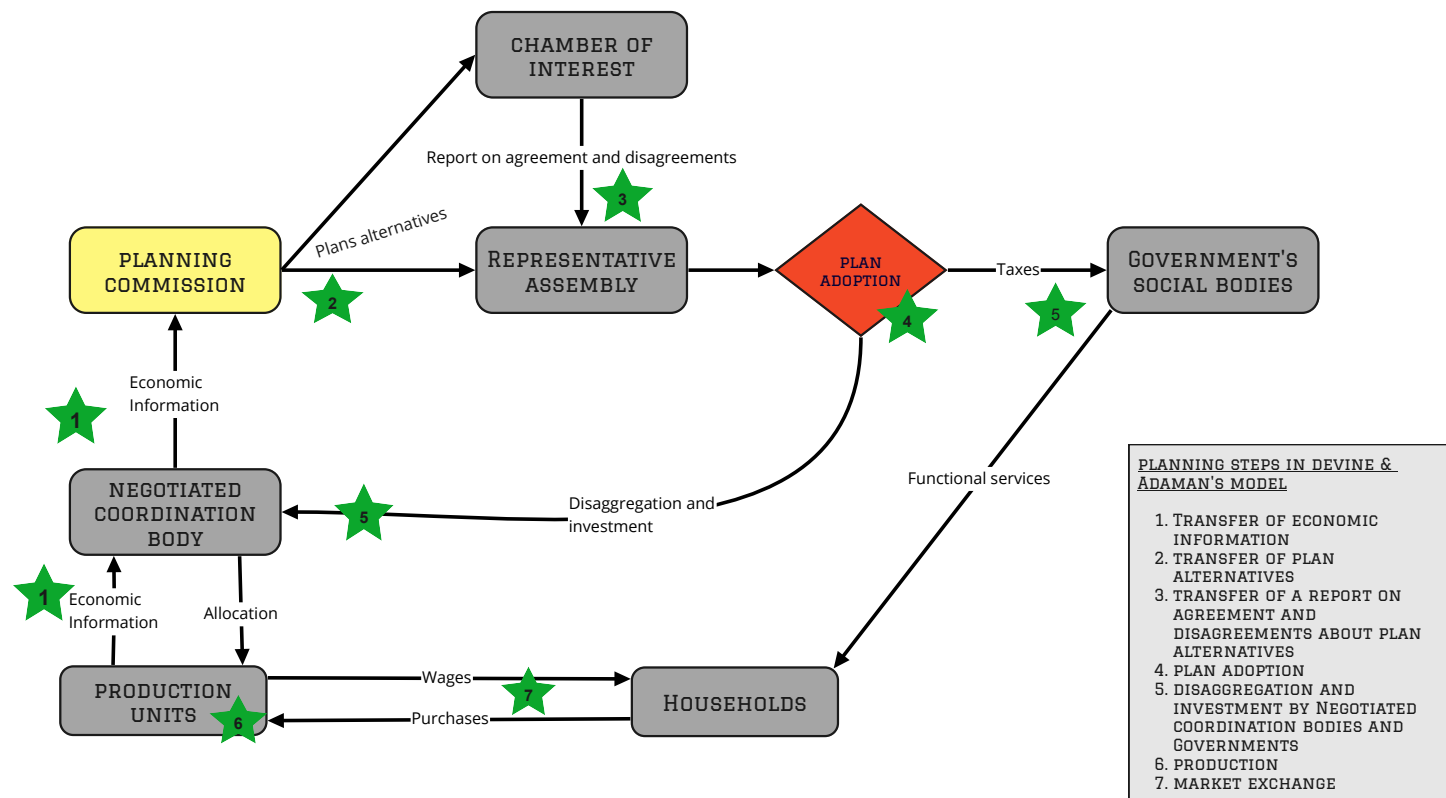
It is by no means certain that the negotiation process that lies at the center of the model will reach a successful conclusion every time. Pat Devine keeps insisting on this very point: in time, people will learn to make sound economic decisions because failure will have consequences on their lives. The repercussions might include inflation, a production unit having to shut down, or the exhaustion of specific resources at the local level (Devine 1988, 201, 270-72). These dire consequences are similar to those encountered in capitalism. However, negotiated coordination would ensure that all individuals would become aware of the consequences of their economic decisions and take responsibility for them. Devine claims that people would, in the longer-term, change the way they operate accordingly.

Recent work from proponents of negotiated coordination focuses on how the model would take care of ecological considerations (Adaman et Al. 2003; Adaman and Devine 2017; Devine

2017). For the authors, the institutions of negotiated coordination are re-embedding the economy into society and nature and are making the economic process more self-conscious and subject to a variety of points of view, including those defending the environment (Adaman et Al. 2003, 270-71; Devine 2017, 45-7). Collective *ex-ante* coordination of major investments would then tie economic activity to human needs instead of profits. From an ecological perspective, here lies the main advantage of a democratically planned economy over capitalism. Since significant investments will be democratically planned, competition and growth incentives will presumably be inoperative; hence the pressure on workers and ecosystems would be significantly lightened. Therefore, according to Devine and Adaman, negotiated coordination is well suited to respond to today’s ecological concerns without needing critical institutional changes.

**“It is by no means certain that the negotiation process that lies at the center of the model will reach a successful conclusion every time. Pat Devine keeps insisting on this very point: in time, people will learn to make sound economic decisions because failure will have consequences on their lives”.**

**Figure 1. Devine & Adaman's negotiated coordination annual planning diagram**



## **2. Albert & Hahnel's participatory economics**

Three years after the publication of Pat Devine's book on negotiated coordination, in the United States, activist Michael Albert and economist Robin Hahnel published two books laying out the basic concepts of participatory economics: one for academics (1991a) and another for a wider audience (1991b). While participation through representation is at the center of Devine and Adaman's model, Albert and Hahnel's focus is on a more directly democratic form of economic participation.

### **Iterative planning process**

In participatory economics, all workplaces are managed by Workers' Councils. Contrary to what negotiated coordination proposes, only workers have the right to vote in these Councils, but all do so directly at the local level, not through representatives (Albert and Hahnel 1991a, 23-4). Though the basic production unit in participatory economics is the workplace, other democratic spaces form concentric circles around and inside it. All offices or workshops assemble in a workplace; each workplace is part of a federation that groups workplaces according to what they produce (Albert and Hahnel 1991b, 21). Each of these levels is organized through council-based direct democracy.

Participatory economics is also based on Consumers' Councils, similarly organized into concentric circles that range from households to large entities such as a country. Peers from other councils review each other's demands and decides if the lower body is making consumer decisions that affect other councils and, thus, should be treated at a higher level: "The colour

of my underwear concerns only me and my most intimate acquaintances. The shrubbery on my block concerns all who live on the block... The frequency and punctuality of buses and subways affect all in a city. The disposition of waste affects all States in a major watershed" (Albert and Hahnel 1991a, 40-1). The idea is simple: those who are affected by a democratic decision should take part in it. These two sets of councils (workers' and consumers') are at the center of the planning process that Albert and Hahnel call "participatory planning" (Albert and Hahnel 1991a, 57-71; 1992; Albert 2003, 219-27; Hahnel 2005: 193-94; Hahnel 2012, 89-104). Iteration Facilitation Boards (IFB) support the councils' work. These boards are workplaces in charge of producing economic analyses and indicative prices based on workers' and consumers' desires, previous years' results, and the enormous amount of data shared during the planning process. After receiving prices and information from the IFB, each council writes a proposal for consumption or production. Each actor modifies its proposal through iterations before they all reach a final proposal without any goods or services in excess demand or supply.

Let us dig deeper into this iterative process. Iteration Facilitation Boards start the process by releasing information: last year's productions statistics coupled with the current social cost of all goods and services ("indicative prices" are similar to the production costs in Devine's model but directly influenced by supply and demand), labour costs, and qualitative information on goods and services. All actors have access to this information.

The Facilitation Boards then send in their demographic, technological, and economic



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forecasts. Taking all these factors into account, each council decides what changes they would like to make to their previous year's proposals: do they want to produce or consume more or less? Do they want to do it differently? What are the consequences of those changes on their inputs and outputs?

They then send their first proposal to the higher federative level, providing both quantitative and qualitative information about their choices. These proposals are broad and do not go into the details of the choices; they are general categories (e.g., four clothing pieces rather than one pair of blue jeans, two sweaters, and one jacket). Personal preferences, statistically predictable, are left to the care of the Councils and Federations helped by the data coming from Facilitation Boards. It is always a committee of peers who approves the proposals of those who make them. Households that make-up a neighbourhood council approve each other's consumption proposal. A neighbourhood council receives approval from other neighbourhood councils. It continues like that up to the largest circles, and the same is true on the production side. The criteria for approving a consumption proposal is that it should not exceed the consumption rights acquired through work. Following the same logic, production proposals are approved because the level of social benefits produced by the proposals' outputs is equal to or higher than the social costs of the inputs it will use (Hahnel 2012, 91-6).

Once every proposal is approved, the Facilitation Boards adjust indicative prices according to what goods and services are now in excess supply and excess demand. A new round

starts with this new data: the councils can then develop new plans to consider these new prices. The iteration continues until no good or service in the economy is in excess supply or excess demand. According to the authors, this process can be helped and even greatly simplified by using computers. Albert and Hahnel also contend that this allocation process can lead to a Pareto optimum outcome<sup>2</sup> (Albert and Hahnel 1991a: 73-106).

### Workers' compensation

As we saw, the major constraint imposed on Consumers' Councils is through workers' compensation. Consumers can only get the amount of product equivalent to the effort and sacrifice they make through work. Participatory economics offers a decentralized mechanism for compensation based on the principle that payment equals effort and sacrifice. If we apply this "distributive maxim" to today's world, those with the most taxing and tiring jobs would be entitled to higher remuneration. In contrast, the more exciting and least demanding jobs would receive lower pay. This remuneration scheme is the opposite of what many are experiencing today.

How does this work in participatory economics? Through what the authors call "balanced job complexes." This proposal differs both significantly and very little from the current organization of work. It differs a lot because its starting point is that everyone should have a set of tasks with the best possible balance between them. It also differs very little because what we call a "job" is, in fact, a blend of tasks whose aggregate is simply the result of other motives than the balancing of effort and sacrifice. With

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<sup>2</sup> A Pareto optimum outcome is an economic state where it is not possible to improve the situation of

one individual without degrading the situation of at least one other.

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balanced job complexes, the tasks that best foster the individual's development will be balanced out by others that promote it less.

Workplaces can distribute tasks as they wish because they are democratic spaces. However, Michael Albert provides a relatively simple way to determine the “sacrifice value” of each task. Each worker could grade each existing task in that environment on a scale of 1 to 20. The council of the workplace would then assemble all the grades and determine an average for each task. The tasks would then be distributed among workers according to their tastes and skill levels to come as close as possible to the workplace average (Albert 2003, 105-06).

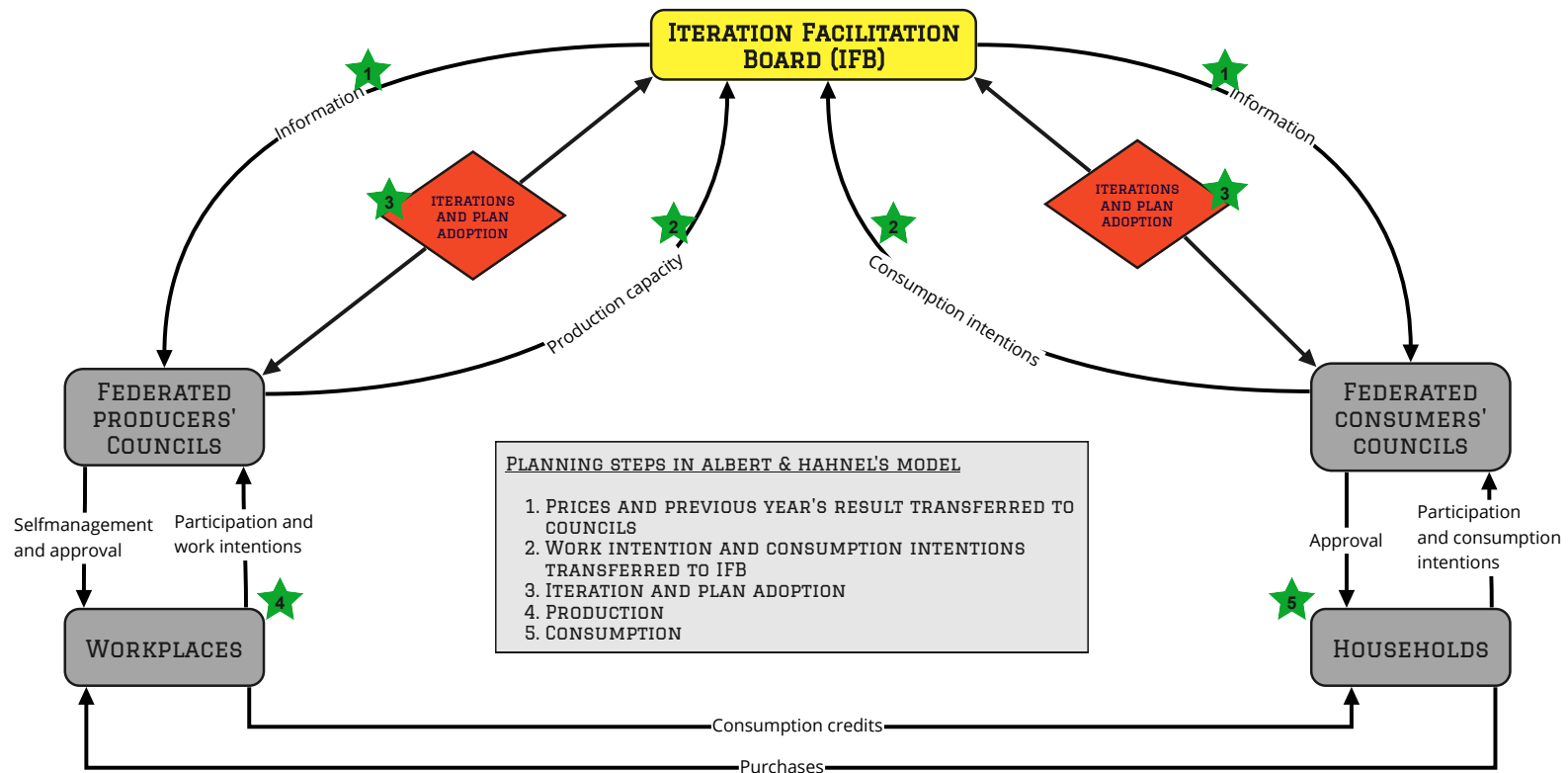
How is this linked to the planning process? The entire society sets the average grade of sacrifice for each industry branch through delegate committees for each industry. It also sets a general average for the whole economy. This general average is the measurement standard for remuneration: giving less effort than average means getting paid less and vice versa. If they are far from the average, workers are encouraged to work in multiple workplaces to reach an equilibrium.

Hence, when Workers' Councils decide on their production choices, it directly impacts their compensation and consumption capacity. Likewise, a rise in prices impacts the capacity of the Consumption Councils. By “forcing” actors to find an equilibrium between what they want and what others want (expressed through price and compensation averages), “this procedure ‘whittles down’ overly ambitious proposals ... about what they would like to do to a ‘feasible’ plan where everything someone is expecting to be able to use will effectively be available” (Hahnel 2012, 94-5).

In recent years, Robin Hahnel has proposed two evolutions of the model. First, he developed what he calls “a pollution damage revealing mechanism,” which gives participatory economics the possibility to evaluate the damage pollution is doing to different communities and integrate this damage in the indicative prices of goods in the form of a Pigouvian tax (Hahnel 2005, 198-203; 2012, 123-32; 2017). He also worked on investment and development planning to propose how participatory planning would function in the longer-term and how these longer-term plans would interact with the annual planning procedure (Hahnel 2005, 203-7; 2012, 115-22; Hahnel and Kerkhoff 2020). He also recently worked on organizing and rewarding reproductive labour in a democratically planned economy (Bohmer, Chowdhury, and Hahnel 2020).

**“With balanced job complexes, the tasks that best foster the individual’s development will be balanced out by others that promote it less. Workplaces can distribute tasks as they wish because they are democratic spaces.”**

**Figure 2. Albert & Hahnel participatory economics annual planning diagram**



### **3. Cockshott and Cottrell's computerized central planning**

In 1993, the economist and computer scientist Paul Cockshott and the economist Allin Cottrell published *Towards a New Socialism*, a book that summarized previous publications they wrote, separately and together, about the effect of the advancement of computer technology on the arguments presented in the socialist calculation debate. Instead of opting for a decentralized form of planning as the two models we just discussed did, they argue that a centralized but computerized form of planning was not only possible, it was a better option than market or non-market decentralization.

#### **A centralized planning bureau**

At the heart of Cockshott and Cottrell's model lies one institution: a centralized planning bureau they often simply call Planning. This bureau is responsible for producing various plans of three different sorts: macroeconomic plans, strategic plans, and detailed plans (Cockshott & Cottrell 1993, 58-9).

Macroeconomic plans are about balancing broad economic measures: levels of taxation, savings, and investments for the whole economy (Cockshott & Cottrell 1993, 89-102). Strategic plans say where the economy should go in the short, medium and long term: what part of the industrial structure do we want to develop, which one do we want to leave aside; how do we want to adapt to a new environmental or, say, demographic realities; by how much do we want to see our labour time increase or decrease (Cockshott & Cottrell 1993, 61-72). The detailed plans make macroeconomic and strategic plans a concrete reality in a given year after considering what resources are available (Cockshott & Cottrell 1993, 73-88).

Planners use two essential tools to prepare these plans: first, a network of computers with at least one station in every workplace where “a local spreadsheet of its production capabilities and raw materials requirements” (Cockshott & Cottrell 2008, 12) is continuously and automatically updated; second, supercomputers that integrate this information into an algorithm designed to allocate raw materials and the labour force according to a set of desired outputs for the whole economy (Cockshott 1990; Cockshott and Cottrell 1993, 81-6). Equipped with these tools, Planning can design a diversity of macroeconomic, strategic, and detailed plans with different total output results and workload inputs. These plans are then submitted to a political process – to which we will come back to – for approval or rejection.

The basic unit of these plans is labour time. Cockshott and Cottrell argue that the labour theory of value is a solid economic proposition upon which to base the planning process on (Cockshott and Cottrell 1989; 1993, 41-52; 1997). The authors offered answers to a series of classical objections to labour value theory, for instance: the complexity of taking skilled labour into account (Cockshott and Cottrell 1993: 34-6), the integration of the value of time through a discount rate (67-9) or the inclusion of the value of natural resources (64-7). So the planning bureau has access to a value for each good in terms of labour time. To form a market-clearing price for each good, it adds a multiplier based on the ratio between the demand for the good and its value in labour time (Cockshott and Cottrell 1997, 347-348).

When adopted, the plans are implemented by “projects” in which people work to create planned goods or services. These projects are

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not enterprises in the sense that they would have the economic right to “own” specific means of production or resources or to “pay” workers to do some work. Instead, they are being allocated a certain amount of work time from workers and the use of specific infrastructure and resources by Planning.

This central bureau, owns all the means of production and every natural resource, integrates all projects “as [...] a capitalist company [integrates] the individual activities that it may be carrying out [...] projects are managerial or administrative rather than legal entities” (Cockshott and Cottrell 1993, 179). The workers are paid in labour tokens directly by Planning. These labour tokens are equal to the amount of labour time a worker has accomplished in a given period. Workers then exchange them for consumer goods. As soon as they do so, the tokens lose their value, like a theatre ticket (24-25). The trends in token spending will give the Central Planning Bureau the necessary information to establish market-clearing prices.

Innovation could be taken care of through an “innovation budget” through which individuals and companies could apply to receive funding for their ideas and projects (Cockshott and Cottrell 2008: 90).

### Democracy, planning and individual rights

The Cockshott and Cottrell model may, at first sight, seem not only centralized but also quite hierarchical, with Planning commanding from the top and everyone underneath obeying. While they have not developed the political aspect of their model as much as the economic one, in their 1993 book and in a few articles Cockshott and Cottrell proposed a direct democracy based on sortition, inspired by the

Athenian classic democracy (Cockshott and Cottrell 1993, 157-70). Hence, “[t]he various organs of public authority would be controlled by citizens’ committees chosen by lot. The media, the health service, the planning and marketing agencies, the various industries would have their juries.” (167). These committees could act as regulatory bodies – establishing norms, rules, and regulations– and economic bodies –being allocated production mandates and resources by Planning and ensuring they are fulfilled. They would be responsible for the day-to-day decision-making at the top of each organization and institution in society. It is noteworthy to mention that local democracy only intervenes *ex post* in Cockshott and Cottrell's model, it democratically organizes the decision taken by the plan, which is written by the Central Planning Bureau and adopted by referendum.

**“The Cockshott and Cottrell model may, at first sight, seem not only centralized but also quite hierarchical, with Planning commanding from the top and everyone underneath obeying. While they have not developed the political aspect of their model as much as the economic one, they proposed a direct democracy based on sortition.”**

The macroeconomic plan and some aspects of the strategic plan would be submitted to citizens through annual referenda using electronic procedures (Cockshott and Cottrell 2008, 11-2). The most important aspect of these votes is the

level of taxation: the amount of work time that society should invest in goods and services available for free to all citizens. When the quantity of work time necessary for these public services is adopted democratically, a flat tax covering this exact amount is deducted from every working person's labour token (Cockshott and Cottrell 1993, 166).

This democratic system also offers rights to individuals: the rights to earn a living (even if they are, for some reason, unable to work, in which case they receive essential goods without any obligation on their part) and the right to receive the full value of their labour and to dispose of this value as they see fit (Cockshott and Cottrell 1993, 175). "In all cases the people are the ultimate delegators of power. Either they vote to tax themselves and entrust a demarchic council with a budget to produce a free service, or they choose to purchase goods, in which case they are voting labour time to the production of those goods." (Cockshott and Cottrell 2008. 16).

Cockshott and Cottrell (2008) updated their argument in recent years by including the new technologies that are now available. Their vision has informed many contemporaries by demonstrating that democratically planned economies can take advantage of technological advances, including the ones used by the largest capitalist corporations that are deeply involved in planning massive economic networks (Durand and Keucheyan 2019; Phillips and Rozworski 2019).

Thus, the authors propose a centralized, fully computerized and moneyless system that calculates and expresses all goods' value in working hours. Their contribution is crucial to

understand that democratic economic planning is technically feasible.

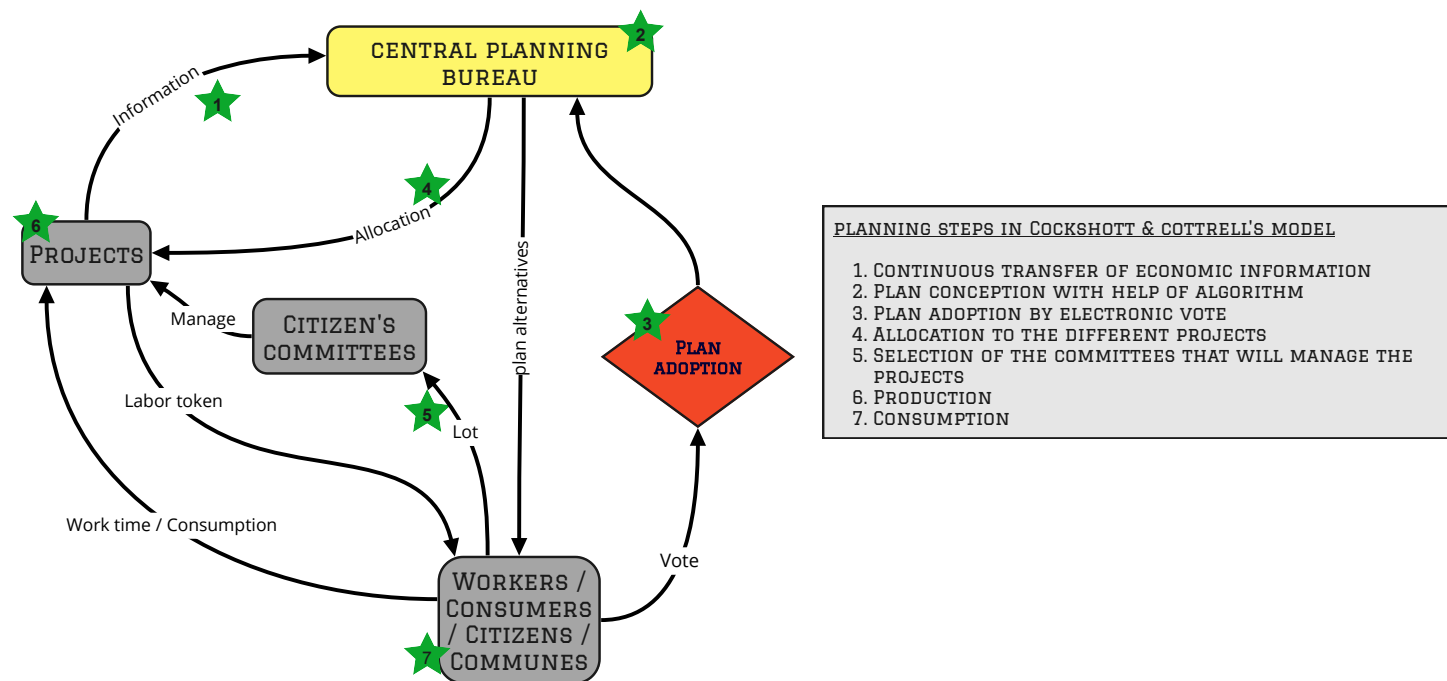
## Conclusion

These proposals are undoubtedly imperfect and would benefit from an improvement and greater detail further. Several nuances and distinctions are absent from this text. Nevertheless, these imperfections should not prevent us from starting to reflect now on the possible configurations of a postcapitalist economy. We also omitted in these brief sketches the critiques formulated by previous readers of these models and the ones that we could have proposed. Rather, our goal was to lay out simply and clearly the models' functioning so that we could discuss and criticize them elsewhere.

Getting out of capitalism implies finding desirable and functional alternatives to replace it. It is necessary to continue analyzing and criticizing the world as it presents itself to us, and it is just as imperative to question the nature of the world we want to build. We should consider these two tasks as two sides of the same coin.

**“Getting out of capitalism implies finding desirable and functional alternatives to replace it. It is necessary to continue analyzing and criticizing the world as it presents itself to us, and it is just as imperative to question the nature of the world we want to build.”**

**Figure 3. Cockshott and Cottrell's computerized central planning detailed plan's diagram**



# Glossary

## 1. Devine & Adaman's coordinated negotiation

### Chamber of Interests

The Chamber of Interests is a consultative body where interest groups and cause groups are represented. There are Chambers of Interests at the three levels of Devine's model (national, regional and local). The Chamber of Interests brings together all interest groups and cause groups representatives to debate and ideally agree on the plan's content to be adopted. When they have reached an agreement or have decided that such an agreement is not attainable, they then send a report to the Representative Assembly presenting their agreements and disagreements. On the basis of this report, the Assembly will discuss and adopt the plan (Devine 1988, 194).

### Functional Services or Functional Activities

Functional Services or Functional Activities are the terms used by Pat Devine to designate the equivalent of today's public services in most advanced capitalist countries: health, education, environmental protection, etc. These services are tax-funded and offered by Social Bodies (Devine 1988, 213).

### Interest groups and Cause groups

Interest groups are self-organized groups of citizens interested in a specific question: professional bodies and unions, organizers of recreational activities (cultural, sports, etc.). Cause groups can broadly be understood as social movements. All these groups function through the logic of election and representation. Their representatives meet in the Chamber of Interest, aiming to defend their respective groups' interests in elaborating the plan (Devine 1988, 153).

### Market exchange

Market exchange consists of an act of sale/purchase between a production unit and another production unit or between a production unit and an individual as long as the sale does not affect production capacity significantly and requires major investment. Negotiated coordination keeps market exchanges (Devine 1988, 24).

### Market forces

Market forces refer to how changes in production capacity (like major investments) occur. Under capitalism, big corporations coordinate these investments ex-post in an atomistic way. Under negotiated coordination, a democratic and negotiated coordination process replaces market forces (Adaman and Devine 1996, 534).



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### **Negotiated Coordination Bodies**

The Negotiated Coordination Bodies are responsible for economic coordination within a production sector. These bodies make the major investment decisions regarding a sector. This body is comprised of elected representatives of the same sector's production units, main customers, major suppliers, relevant Planning Commissions, and interest groups. The main objective of this institution is to coordinate economic activities in the same sector. Issues relating to the main changes in production capacities, how to achieve targets, and how to manage production gaps between the same sector's production units are addressed here (Devine 1988, 231).

### **Planning Commissions**

The Planning Commissions have two primary purposes. Its first one is to elaborate plans. Based on the Negotiated Coordination Bodies' economic information, the Planning Commission members elaborate and submit various plans to the Representative Assembly where one plan will be adopted. Planning commissions consist of members of the concerned governments, of productions units, of negotiated coordination bodies and of interest and cause groups. The second purpose of the Planning Commissions is related to the implementation of the plan. They are responsible for economic coordination between the different authorities at a geographic scale (national, regional and local). After receiving the version of the Representative Assembly's plan, Planning Commissions are responsible for allocating the principal investments to the various production units through the appropriate Negotiated Coordination Body. There are Planning Commissions at the local, regional and national levels (Devine 1988, 190, 213).

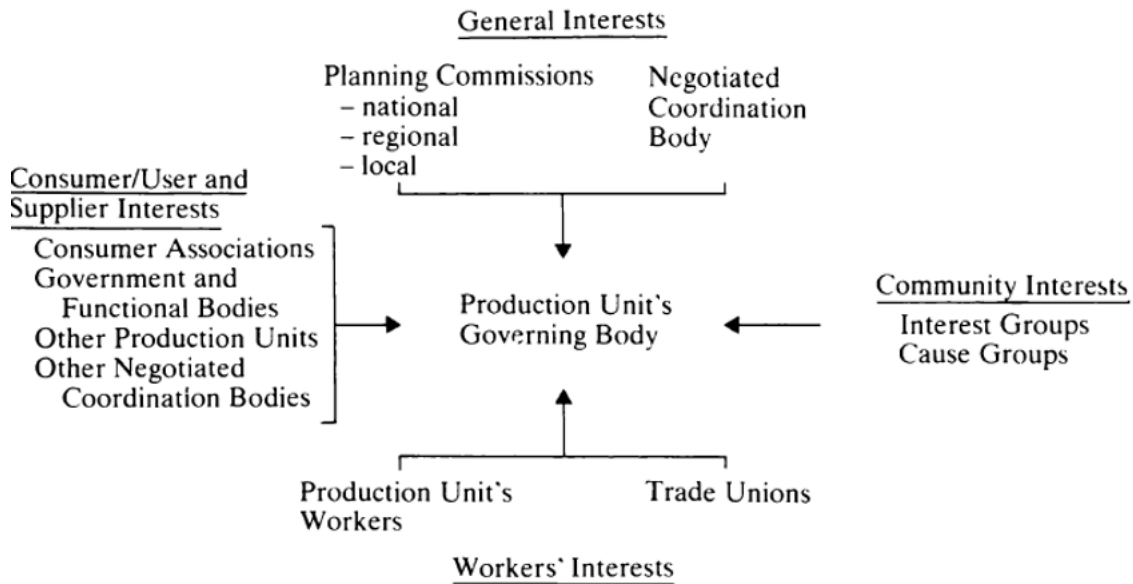
### **Prices and Wages**

Prices are determined by the production units and correspond to the social costs of production. Production costs are divided into two types: primary inputs and secondary inputs. The cost of primary inputs (natural resources, energy, and capital) is determined at the national level since they affect all production units. An income policy is adopted at the national level, but local production units establish wage levels while respecting the policy's parameters. With this data and adding the depreciation for the equipment and building, each production unit can set its prices by adding up production costs. (Devine 1988, 197-198).

### **Production Units**

Production units (roughly equivalent to enterprises) produce goods and services and provide them to consumers. Representatives from four sectors sit on the decision-making body of the production unit: the general interest (through national, regional and local Planning Commissions and Negotiated Coordination Body), the interests of consumers, users and suppliers (through consumer associations, government and public services, production units that buy from or sell to the production unit and other industry development councils related to the production unit), the interest of workers (in the form of the workers of the production unit itself and their unions) and the interests of the community (through interest groups and cause groups). These representatives then agree on the most appropriate use of productive capacities through negotiation, considering each others interests. They are also responsible for making small local investments. Within this framework, the production unit is self-managed by its workers.

**Figure 4. Possible composition of a production unit's governing body (Devine 1988, 226)**



### **Representative Assemblies**

Representative Assemblies are political decision-making bodies composed of all the people's representatives elected by universal suffrage. Political parties assemble different representatives on an ideological basis. The party whose representatives form the majority constitutes the executive power, while the legislative power also includes opposition parties. Their primary economic purpose is to adopt the plan. Based on the Planning Commission's various plans and considering the report from the Chamber of Interest, the elected members of the Representative Assembly deliberate and adopt the final version of the plan. This final version will then be sent back to Negotiated Coordination Bodies for implementation. There are Representative Assemblies at the three levels of the negotiated coordination model: local, regional and national (Devine 1988, 142, 254).

### **Small scale activity**

Self-employed individuals or small co-ops carry out what the model calls small-scale activities (repairs, art, personal growth, massage therapy, graphic designers, etc.). Workers in these sectors could be grouped in "centers". Like co-working spaces, these centers would provide workspace and resources for these workers. The centers would be self-managed within guidelines decided by the local Planning Commission. If their activity level extends outside their initial locality, this activity would have to register as a production unit and have its own governing body (Devine 1988, 230).

### **Social Bodies**

Social Bodies are the government's agencies that provide the Functional Services (the equivalent of public services in this model): health, education, environmental protection, etc. Social Bodies are decentralized, are present at the three levels of the model (national, regional and local) and financed by taxation (Devine 1988, 213).

### **Social ownership**

Social property is a dynamic form of ownership of the means of production that is adapted to the needs of the communities that are concerned by a decision. It is not equivalent to state ownership as it means control by society as a whole. There are two conditions for social ownership: the people most affected by using specific means of production should take part in decisions concerning them and these decisions should be coherently integrated into a broader plan decided by society as a whole.

The adequate governing bodies of the production units, Planning Commissions, and the Negotiated Coordination Bodies coordinate the implementation of this form of ownership (Devine 1988, 223).

### **Subsidiarity**

The principle of subsidiarity favours decision-making being done in the utmost decentralized way possible. This principle implies that decisions should be made primarily by those who will be proportionally affected by it (Devine 2002, 75).

### **Taxes**

The government collects two kinds of taxes: one on production units and one on wages. The tax on production units is equal to the renting out of resources and the return on assets employed. Depending on the amount produced by this tax on production units, it could be complemented by a tax on wages. These taxes are the government's source of revenue and finance the government's Social Bodies providing Functional Services. Local and regional governments would also collect taxes. The level of taxes on production units would be set at a rate that would leave production units with a surplus for minor investments (Devine 1988, 216).

## **2. Albert & Hahnel participatory economics**

### **Balanced Job Complex**

In participatory economics, jobs would be divided into tasks and reorganized to create a balanced set of tasks. This redistribution aims to equalize desirable and undesirable tasks across workers of the same workplace and workplaces. It involves reviewing the division of labour to balance the content of work between planning and execution tasks as much as possible. Participatory economics, therefore, does not seek to "abolish" the division of labour. Instead, it aims to review the division of labour to redistribute burdensome and empowering tasks equitably. It aims to give decision-making time and power back to workers while letting them stay in contact with the production sphere (Hahnel 2012, 55-56).

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### **Complementary Holism**

Complementary holism is the general theory underpinning participatory economics, which sees society as divided into several spheres containing social institutions responding to human needs and desires. These institutions shape human desires and human needs, just like institutions are shaped in return by those desires and needs. It aims to describe society by integrating and going beyond four social theories described as monistic: nationalism, feminism, Marxism and anarchism. These social theories are monistic as they do not offer a perspective that subtly understands the complexity of society (Albert et Al. 1986, 80).

### **Consumers' Councils**

Consumers' Councils are in charge of consumption in the planning process. Like with Workers' Councils, consumers' councils are organized according to the federal principle, but on a geographic basis instead of a sectoral basis. They are nested in each other from the individual household to the national council (Albert 2003, 93).

### **Iteration Facilitation Board (IFB)**

The primary role of the IFB is to facilitate and coordinate the planning process. This body collects all the proposals for production and consumption), compares them, and sends alternative suggestions back to the various councils. Its function is strictly perfunctory. It is a technical workplace like many others, and it does not hold any extraordinary political power. It is in charge of assisting the workplaces and the households by integrating the whole participatory planning process through information (Albert and Hahnel 1991a, 62).

### **Prices**

The IFB calculates prices. They are cost-based and influenced by supply and demand. In the iterative planning process, IFBs emit prices that are then affected by supply and demand as expressed by Workers' and Consumers' Councils. A new round starts by taking into account these new prices. Prices provide useful information about the social costs and the social benefits of goods and services (Hahnel 2012, 91-92).

### **Remuneration**

Workers' Councils set remuneration according to effort and determine the level of effort for each task. The objective of linking wages to effort is to ensure that everyone is compensated according to their effort, the only thing that workers have a clear impact on. Remuneration is distributed through consumption credits that customers can use to get consumption goods. These credits are not kept by workplaces after the transaction and they aren't used in the production process (Albert 2003, 112; Hahnel 2012, 59).

### **Workers' Councils**

Workers councils are in charge of the self-management of workplaces that are producing goods and services. Only workers are members of those councils. All workers of a workplace take part in the workers' council decisions. They do so directly in their local councils. Workers' Councils are in charge of the day-to-day management of their local workplace and are federated by sectors and manage the entire productive economy through this process. They are nested in each other from the small working team to the national

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council. These councils are where workers express how many hours they wish to work, what they wish to produce, how they want to organize their workplace, and so on.

(Albert 2003, 92).

### **3. Cockshott and Cottrell's computerized central planning**

#### **Central Planning Bureau**

The Central Planning Bureau is the central institution of Cockshott and Cottrell's model. It is often simply called "Planning" by the authors. It is composed of experts (economists, technicians, computer scientists and engineers). The Central Planning Bureau's main task is to produce alternative plans. Planning produces three kinds of plans: macroeconomic plans, strategic plans and detailed plans. Those plans are proposed to the population by electronic referendum and adopted (Cockshott and Cottrell 1993, 179).

#### **Citizen's committees**

The state would be maintained but not as we know it. It would be an "acephalous state" in that it would have no legislative power and its role would be limited to implementing the decisions made by its constitutive committees. These committees would be composed of citizens chosen by lot from among their users and workers. All public bodies and each industrial sector would be governed in this way (health, education, water, electricity, transport, etc.) (Cockshott and Cottrell 1993, 167).

#### **Commune**

Communes are non-mandatory living spaces that Cockshott and Cottrell think would be more efficient and more adapted to their model. They should offer one room per individual within a collective habitat and should consequently be designed with an architecture suited for this new domestic lifestyle. Communes would collectively realize five types of economic activities: housing, child care, certain leisure activities, and assistance to the elderly. The pooling of these activities would allow for significant economies of scale (Cockshott and Cottrell 1993, 150).

#### **Detailed plan**

The detailed plan contains the concrete allocation of resources within the framework established by the macroeconomic and strategic plans. If the strategic plan invests, for example, a certain amount of national revenue in a specific sector, the detailed plan will specify the concrete amount of resources needed in each project to meet this goal (Cockshott and Cottrell 1993, 73).

#### **Macroeconomic plan**

The macroeconomic plan establishes general parameters that aim to frame economic development in the long term. It contains investment levels for the economy as a whole, the level of taxation and savings (Cockshott and Cottrell 1993, 89).

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### **Prices**

The value of goods and services would be expressed in hours of work socially necessary for their production. However, prices would not necessarily correspond to value. The Central Planning Bureau would make adjustments according to demand. Thus, if a commodity is in high demand, prices would be adjusted to meet this demand adequately. Concretely, two numbers would be displayed at the time of purchase: the “value” (the number of hours of work socially required to produce it) and the price adjusted according to demand. The labour value would thus serve as a milestone to curb price elasticity (Cockshott and Cottrell 1997, 347-348).

### **Projects**

Projects resemble business in capitalist society and are where production occurs. Projects have no formal legal existence; they are only administrative units that belong to the community through Planning. The link between the Central Planning Bureau and projects is similar to the one between different divisions of a single company and its executive. Projects and the Central Planning Bureau mostly communicate through digital data. Each project has a computer dedicated to planning connected to an information network dedicated to this task (2008, 9). Each project is self-managed by its workers (Cockshott and Cottrell 1993, 179).

### **Strategic plan**

The strategic plan concerns the evolution of the economy's structure in the short, medium and long term. The strategic plan presents which sector to develop and which to compress, the economy's environmental dimension, and the amount of total working time (Cockshott and Cottrell 1993, 61).

### **Taxes**

Income tax, land rent and consumption tax pay for the services offered to the population free of direct charge. Since the income distribution would be roughly equal, there would be no reason to introduce a differentiated tax. The authors propose introducing a “flat tax”, the amount of which would be decided annually by democratic means. The second source of government revenue is land rent. Land ownership would be a public monopoly. Land, like natural resources, would be safeguarded by an international environmental agency. A national organization would serve as an intermediary to facilitate the coordination of such an agency's activities. Thus, when someone buys a house, she owns the materials but rents the land through a rent to the state. A consumption tax would be introduced for socially and ecologically undesirable goods and services. This tax would make it possible to limit the use of these goods and services. For instance, specific taxes could target products such as oil, tobacco, and alcohol to adjust consumer behaviour (Cockshott and Cottrell 1993, 70, 99, 211).

### **Value**

The labour theory of value is the foundation of Cockshott and Cottrell's model. Hours worked are the basic unit used in the whole model. Hence, wages, prices and plans are all expressed in work hours equivalent (Cockshott and Cottrell 1993, 41).

### **Wages**

Wages are differentiated according to productivity and paid in labour tokens. According to the authors, associating productivity with wages makes it possible to recognize disparities in the effort invested in work and remunerate workers accordingly to their effort, measured in output. The authors suggest three productivity levels: A, B, and C; A being highly productive, and C being less productive. This rating would not be related to the worker's training or education level but strictly to their productivity. It would be a way of recognizing each worker's contribution at his or her actual height. When a person contributes more to society, he or she receives proportionally more, and vice versa. In the case of a labour shortage in a particular sector, Cockshott and Cottrell consider the possibility of increasing wages as an incentive. The Central Planning Bureau pays the wages in labour tokens, not the projects. Those tokens can be used only by the person to whom they were given. When the tokens are used, they are destroyed, just like theatre tickets (Cockshott and Cottrell 1993, 34).

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