

Thrifty Headway: Cooperative Robotics

Rinaldo C Michelini Di San Martino*

DIMEC - University of Genova - Italy

*Corresponding Author: Rinaldo C Michelini Di San Martino, DIMEC - University of Genova - Italy

ABSTRACT

The cognition distinguishes the human civilisation from the natural backwoods, helping fit ways to social advancements by technology innovation and political deployment. The cognizance has instruction modes for its teaching and diffusion, followed by manufacture or relational modes, to profit from material sources or to benefit from collective arrangements. The tangible transforms entail permanent waste and entropy: the ecology, today, tells that our earth has bounds: depletion and pollution cannot last. The advancement sustainability is new defy, asking the revision of the up-now devised technical and political assets. The globalism shall follow localism, with technical worldwide web, robotics and political global village. In the thrifty track, robots are men designed cooperative aids: they can enhance the human intelligence efficiency, but not widen its functional operations.

Keywords: Cognition instruction modes - Technology innovation manufacture modes - Political deployment relational modes - Ecology sustainability robotics globalism.

INTRODUCTION

The ecology asks revising our ideas on the future progress, with the lessening of worthy supplies and the piling up of polluting wastes. The civilisation is manmade issue, joining technology innovations and political deployments, by the intelligent design and accomplishment of material transforms and social layouts. The men supply actuation and thinking, due to inborn agentive and reasoning talents. We factually recognise in the progress the human knowledge, empowering technical and political architectures, with solid artefacts and abstract orders. The men knowledge is crucial invention, possibly, later linked to galactic information or to spiritual entity; its factual definition leads to <knowledge systems>, today, with robot management, as this is man replacer for handling and cognition jobs.

The thrifty headway aims at desirable lasting progress, lowering new resources and increasing the reverse logistic. The careful control of the supply chains entails revising the extant progress practices:

- how far and correctly the human knowledge replicates the real galactic information;
- how the human civilisation develops, affecting the terrestrial resources and wastes;

- how far the ecology is impending change, forcing decreases along thrifty headways.

The following remarks offer widened readings, when synthetic hands/minds operate, mixing the human and robotic knowledge and related programming and effecting competences, [1]-[5].

KNOWLEDGE-DRIVEN PROGRESS

The progress is aware issue, founded on typical anomalies, paralleled to the environ reality, which entail:

- the *instruction* modes exemplify abstraction and encrypting describing competences;
- the *manufacture* modes epitomise design inventiveness and productive effectiveness;
- the *relational* modes characterise communication, trade and governance capabilities.

The cognition leads to evocative descriptions, i.e., selection of symbols, with agreed meanings. The choice sharing involves clans: the transmission avails of elders' instruction; babies and robots ask initial education. The cognition is two-step routine, which map the feelings, into contingent picks:

- the selective discernment classifies the perceptions, with allocation of vocal/graphic symbols;

Thrifty Headway: Cooperative Robotics

- the ensemble learning needs shared agreement on the selected symbols and allocated meaning.

The discernment applies on the same reality, with contingent encoding of given items, acts and facts. The narrations, because of the used native languages, unless if universal machine signs are in use:

- combined learning, which mixes human and machine languages, with meaningful outcomes;
- universal learning, which uses translation dictionary and <knowledge> permanent constancy.

The human languages are heterogeneous sets, using the voice coding by vocals and consonants to create dictionaries of words, or resorting to graphic ideograms. The children teaching involve writing and reading, with rules to construct of sentences. The progress follows typifying patterns:

- remote dexterous undertakings of garbed societies inhabiting dwellings and settlements;
- systematic execution of manmade biology replicated courses, for foodstuff multiplication;
- effective control of the activity programming, aimed at the efficient supply organisations.

The men create garbed societies, with artificial dwellings, resort to agriculture and avail of planning and management of the doings. The progress already include helpful prospects:

- robot assistances: artificial contact, trade, business and management, done by computers;
- ecology restraints: global exhaustion/contamination tests, experiencing automatic effecting.

The knowledge driven progress, typically, starts by bottom up *contingent* construction. Yet, the presence of backing galactic information or the existence of steering spiritual wisdom is safe way to *total* change.-

TECHNICAL/POLITICAL PROGRESS

The progress narrations detail technology innovations and political enhancements, which modify initial wilderness. A possible list includes the following example situations:

- the <clothing revolution>: archaic layout of garbed societies, living in aptly built houses;
- the <agrarian revolution>: current set of settled societies, fed by breeding and farming;
- the <industrial revolution>: possible series of open societies, aimed at robot-aided ways.

The technical inventions allow novel gears and devices, each time widening artefacts and processes:

- the *manufacture* modes typify by personal speciation, aimed at multiple arts and crats;
- the *agrarian* advance widens to new biology areas the manmade productive effecting;
- the *industrial* improvement brands by controlled efficiency of the activity organisation.

The parallel political implementation need accommodating changing societies, with in-between collective breakthroughs, when the people life conditions drastically modify:

- the <scattered populations>: nomadic tribes, changing homelands, aiming at foodstuffs;
- the <settlement countries>: split-sovereign <nation states>, fighting for conquest/supremacy;
- the <earth fullness>: uniform contacts and trades <global village>, under ecology checks.

The switch from nomadic tribes, to nation stated keeps the assemblies independence or sovereignty. Using they competition for enhanced advances and localised headships. The overcrowded earth is recent situation, opening mew defies. The progressive growth shall explores several options:

- home manufacture, by means of spread out domestic and local textile and building jobs;
- country produces, using husbandry and upbringing jobs, as diversified fonts of foodstuffs;
- mass production, with economy of scale maxi sing productivity with minimal item cost;
- customers' satisfaction enabling economy of scope, optimising the return on investments;
- ecology sustainability, with circular planning, aimed at sources' recovery and depollution.

Thrifty Headway: Cooperative Robotics

The productivity and efficiency are initially wholly left to the men diligence and, only progressively, have autonomy as typifying tasks or works in charge to robots. Traditionally, we list five steps:

- <industry 1>, with *making* given by on-line workforce and *scientific* work organisation;
- <industry 2>, with *throughput* settled by fixed automation and special purpose trapping;
- <industry 3>, with *production* done by robotic, aimed at adaptive planning and delivery;
- <industry 4>, with *provision* of products, functions, services or any other robotic deeds;
- <industry 5>, with running of all *tangible supplies*, under eco-sustainability constraints.

The nation state ages characterise by countries' rivalry, with supremacies and dominions; the *regular* closed societies are sovereign, with citizens' legitimation at private/public ranks:

- the personal communication sphere allows civilian understanding and interacting;
- the indorsed legality sphere sustains transactions, keeping right business dealings;
- the public headship sphere brings in the operation autonomy of nation assemblies.

The *relational* modes properly describe the *regular* societies by three-layer organisations. The headships define with recourse to godly Grace, or to natural Darwinism, or to direct election of free equal citizens.

ECOLOGIC SUSTAINABILITY

The earth is tiny planet, with bounded raw supplies and narrow vacant lands. The growth is necessarily limited environ spaces. The live beings are spot actors/thinkers, operating bottom up, I., at first, passively back-reacting tangible frames. The men gradually occupy the all globe, changing the earlier wilderness, so that the interactions keep memory of the performed transformations. We distinguish:

- localism: shaping of *regular* societies, namely, autonomous and sovereign nation-states;
- globalism: setting of the *uniform* society, say, worldwide village under ecology constraints.

The <global village> is social discontinuity, when the lack of individual autonomy and national sovereignty becomes evident. With the *globalism* breakthrough, the growth sustainability is critical query, face to over-depletion and over-pollution of the planet. Yet, the progress is, perhaps is not, just, human invention:

- the reality follows coherent courses, described by rational trends or showing wise styles;
- the cognition gives worth to men, assessing dependable depictions and planning options.

We have quoted the *faiths* in *galactic* information or in *godly* wisdom. We, moreover, recall that men are joint hands/minds; the social have trails different from the technical ones:

- the homeland's *regularity* yields to the split-sovereign setups of parallel closed societies;
- the homeland's *uniformity* establishes the dependable open society of the global village.

Our alertness tells that we conscious actors and we are aware of the context, in which doing the duties. The fact applies in general; notably, at <industry4 and5> steps, when the ecology is impending quest:

- the robotic design and effecting merely duplicate standard manmade activities and controls;
- the robot actions and controls can accomplish operations, exceeding the human capabilities.

The ecology sustainability through robots, possibly, can exceed human ranges, by synergies. The analyses consider the earth/universe unbalance and look after galactic corrections: these may considerably restore the earth, without modifying the galactic trends. On men, however, the effects differ:

- the planning and execution automatism in the management of the men-replacing robots;
- the compulsory sort of the ecology constrictions on the civilisation headway transformations.

The technology innovations involve the mentioned industry steps; the political deployments shall lead to the <global village>, which joins contradictory features, worldwide contacts and trades with compulsory control on

Thrifty Headway: Cooperative Robotics

supply chains and backward logistics. The *relational* modes have an updated upper layer:

- the direct effecting, involving friendship agreements and voluntary covenants;
- the contractual links, presuming private law obligations and promised leaflets;
- the imperative bonds, rooted in supreme edicts, engaging the all communities.

The official rank does not limit to the local sovereignty, but it becomes the impersonal compulsion of the ecology restraints, so that closed independent *regular* societies convert an open uniform society, with the assigned steering of recovery applied to each single individuals.

- *relational* modes, with behaviours ruled by communication, trade and rival sovereignties;
- *relational* modes, with behaviours allowing communication, trade and ecology restraints.

The «global village» replaces the myth of free and equal citizens; the *altruism* at uniform spread is new fable supplants the local and national solidarity, because globalism follows top down ruling.

CONCLUSION

The civilisation is intriguing happening in the universe, with aware actors and designers on the negligible planer earth, endowed of the thinking and judging skills. The reality is galactic backdrop, having undecided size and scope. We, only, perceive that we cannot affect the galactic setting: the reality evolves whatever are our thoughts and designs, because the humankind is negligible aspect, compared to the overall reality.

The intriguing aspects include the agentic and cognition aspects, apparently carried on with the human anomalies, providing meaningful descriptions and conscious enhancements, at least, at *contingent* range. Within that restriction, the peculiar narrations initially include the relevant economy successes, with men developing *artificial* dwellings and synthetic setups; lately, the accounts need adding the ecology warnings, with exhaustion and contamination alarms. The growth sustainability becomes critical aspect, with though, the frugal chance, through alertness and conscious reverse logistic, with rescue and salvage outcomes. The «global village» is compound social organisation, performing the ecology protection acts with the required planning uniformity.

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