

Strategic Relevance of Artificial Human Intelligence

Using the concept of time it is argued that the world of the future will be a bellicose one and will be too complex to be coped with by natural, non-instrumental human intelligence. The features of artificial consciousness are explained and it is argued that mankind, split into two competing blocs, will need it for survival. <P>

Concepts of Artificial Intelligence

In technology, cybernetics is usually referred to as artificial intelligence **AI**, although the notion of "intelligence" implicit here neither meets the naive nor the scientific definition of its meaning. More recently, non-artificial components, like live neurons, have been integrated into electronic circuits. This new quality of AI might be referred to as hybrid AI, **HAI**, with bio-technological AI **BTAI** as a sub-case.

Contrary to these bottom-up approaches that integrate hardware components to an ever higher level of performance, artificial human intelligence **AHI** and artificial conscious intelligence **ACI** follow a top-down paradigm that neither conceptually (by the notion of the concept of intelligence involved) nor methodically (deductive-mathematically instead of inductive-technologically) are compatible with the bottom-up approaches. Bottom-up and top-down are characterized by the inherent arrow of time. AI starts from the technological possibilities available and evolves by developing them towards an unknown future result. AHI conceives of a future goal as having been realized and then searches for a possible route of development towards it. Thus, the arrow of time in the bottom-up case may be called progressive **P**, while top-down works time-recursive **R**.

The concept of AHI also implies that different species of HI are possible in principle. These differences presumably coincide with differences in cultures and mentalities of ethnic groups. This shows that it is the "H," and not the "I" that decides about the definition and realization of AHI. Therefore, the "H" may be taken to stand for consciousness as a feature exclusive to human beings, which permits us henceforth to use the term ACI as a proxy for AHI throughout our discussion.

The advantage we gain by dropping other possible forms of AHI is that that the features of ACI can be defined, notwithstanding that ACI has not been realized so far. From these features the strategic and political relevance of ACI is predictable. The study presented adds a so far neglected aspect to the research in future developments, i.e. to studies of global climate change, population growth, peace keeping and future regions of crises, just to mention the most prominent topics.

Properties of ACI

For our discussion it suffices to consider ACI as consisting of a (virtual) "environment" that is analyzed by an "agent." The environment consists of phenomena or "qualia" that make up the "world" of the agent. The phenomena may be chosen deliberately, as long as the functioning of the agent - its very existence - is not impaired. Especially, there is no need to take pains in selecting non-contradictory phenomena, thus constructing the environment in a gap-free, or internally consistent, manner. The agent automatically assumes and re-constructs the environment that it is exposed to as to be internally consistent, and thus meaningful, by means of an ability that we may call "consciousness." How this potency of the agent works is not of our concern here, no more than are any other technological details.<P>

Wars have been lost due to strategies that disregarded conditions of action impending in the environment. ACI permits to integrate an arbitrary number of conditions into the sand box of the virtual environment and to leave it up to the virtual agent to make sense of them and find the best

strategy and tactics possible. The solution offered will be the best possible due to the inherent capability of the agent to consider each and every detail of the environment. This capability is a property of the structure that links the agent to its environment, one of the technicalities that we leave aside here. Human consciousness does not possess this capability, a deficit that makes up for the difference between human and artificial conscious intelligence. <P>

Geostrategy of future blocs

Human consciousness compensates for the deficit just mentioned by employing culturally specific heuristics in thought and judgement. Civilizations differ by the degree of commitment to these heuristics as well as by the potency of the latter to solve threatening problems. Commitment and cognitive potency, as cultural achievements, decide about victory and defeat in inter-cultural and inter-ethnic competitions. Commitment usually wins over mental superiority, as is demonstrated by the known development of a high culture out of the subjugation of a sophisticated established civilization by nomadic warriors.

It follows that ACI is of highest value to any civilization that features a functionally monolithic mentality. In this case, the commitment factor (monolithicism) is boosted by the cognitive potency factor of ACI. This applies to civilizations that are closely defined by their religion and / or their ethnicity. Their close definition, though, at the same time prevents them to sense their actual demand for ACI, as long as they hold a well defined geostrategic position. Subjugated, retreating ethnic groups are usually in error of their mental superiority. - If they do not hold a well defined geostrategic position, ACI may turn this geostrategic disadvantage into an advantage. This would be true in the case of a spreading militant islamic fundamentalism.

Thus, adding ACI to the scenery of cultural relations and competitions, a paradigm of four orthogonal factors evolves: Commitment (arbitrary vs. coercive), cognitive potency (adapted vs. autistic), geostrategic position (defined vs. globalized), and mentality (monolithic vs. fractioned). - Let us reflect on these multiple interdependencies using a few examples in replacement of a comprehensive systematic study.

In the Pacific theater, **Japan**, in the course of this century, might try again to win hegemony. Her mentality is a monolithic one, based on a uniform ethnicity. By these measures, she does not differ much from her enemy, China. Thus, ACI would render her superior to this adversary. - On the American continent, Japan faces a religiously monolithic, ethnically diversified mentality, represented by the Roman Catholicism of Latin America. The mentally non-existent USA provide the inert arena for an iberolingual reconquista and the simultaneous subjugation of these very reconquerors by the more aggressive asiatic conquerors. Both of these processes consume enormous amounts of energy, which is why a war is highly unlikely to occur. There is no need for ACI on this "war" theater. Any ACI to be developed by Japan will be used against China exclusively.<P>

Wherever the Japanese advance meets fractioned mentalities occupying geostrategically disadvantageous positions, a strong demand for ACI exists on the side of these intended victims. **Australia** has been unable as well to inherit the British mentality as to develop one of her own. Her situation at the geostrategic and economic periphery makes her an easy booty. Thus, it is perhaps not by chance that especially here, at the university of Melbourne, desperate efforts are in progress to endow "chatterbots" with consciousness. A respective success would be Australia's single hope for rescue, if there is any at all. <P>

The **European Union** quite recently decided on a constitution that binds her members - practically all of Europe, with the exception of Switzerland and Norway - to lead wars of aggression anywhere in the world. Programs of rearmament have started a while ago, of which the development of the

troop lifter Airbus "A 380" is just one example. Whom, apart from a few alibi dictators, are we going to fight against, "out there"? The United States, of course, who, by a number of reasons, one of them anchored in her constitution as well, are not likely at all to yield her role of the world's cop to anybody else. The degree of complexity of the resulting fractioned, geostrategically undefined ("globalized") and ill positioned situation of the belligerents will far surpass the coping heuristics achieved historically. Both parties need ACI, and need it against each other. This is one of a couple of developments that will inevitably lead to the realization of ACI, the other one being the militant part of Islam fundamentalism, a globalized, yet monolithic great power. <P>

By Islam, the world is partitioned into two blocs that are characterized by their complementary relation to time. Let us call the European-American bloc **P**, "P" for time-progressive, and the Islam bloc **R**, "R" for time-recursive. Both blocs are globalized, but P's mentality is fractioned, while R's is monolithic. The terms "fractioned" and "monolithic" refer to, as mentioned earlier, the commitment aspect of culture-specific heuristics. Thus, the P-bloc needs ACI to compensate for its interior fractioning, while the R-bloc needs ACI to compensate its ill-defined strategic position, i.e. its globalization. P's historic adaptation to globalization is part of its very mentality, which is why there should basically be no need for P to possess ACI in the first place. The price P pays for its globalization is its geostrategic position, though, the complexity of which will soon reach the level of unmanageability by non-instrumental heuristic means, which is why ACI will be needed, after all.

Due to R's monolithic mentality there should basically be no need for R to acquire ACI in the first place. R's mentality is challenged, though, by its geostrategic position, centralized yet spreading, that calls for adaptational capabilities R has never developed during its history. Where R, in the past, conquered civilizations of whatever mentality, it simply halted the evolution of the latter without acquiring much of the cultural achievements of the subjugated peoples. So, R needs ACI to cope with the complexity of the world it does or wants to rule. - In sum one might say that P needs ACI to manage its interior fractioning, applying it internally, coping with the challenges brought about by its globalization, while R needs ACI to adapt its monolithicism to the real non-R-world, applying it to the latter.

Arms race, time's race

While geostrategic positioning will be the same for both future blocs, these will differ by their mentality, characterized by their attitude towards time. Both blocs will possess ACI, and their ACIs will mirror their specific relation to time. The agent of the P-ACI will be programmed in a time-progressive way, a formalism we may denote as "**p**", while the agent of the R-ACI will be programmed in a time-recursive way, a formalism we may denote as "**r**." The environment of the ACI possessed by P will be a projection of the enemy, i.e. of R, while the environment the agent of R analyzes will be a representation of the P-world. Thus, the P-world is analyzed r-wise by the ACI of R, while the R-world is analyzed p-like by the ACI of P.

Both agents produce optimal solutions in form of tactical instructions for blows against P or R, respectively. P is charged from a position located in the future. This means that any elements of P that do not lead to R will be charged and possibly destroyed. - R is charged from the present - in R's view from the past - by charging any elements of R that are non-existent in the present of P, and eliminating them if possible. As R is monolithic, the destroyance of any part of R means the destroyance of all of R. Nevertheless, R is surprisingly immortal. It will react by seeking refuge in the future, a reaction that is a built-in feature of the R-mentality. It will transpose into a higher form of R. In coping with this, P will further develop p. The higher the level R transposes into, the more will P elaborate on the formalism p, adding to its abstractness and omnipotence. This correlates with a diversification of the very phenomena or qualia of P. More and more traces into the future open

up, while the probability for each, not to lead to R and thus to challenge R, lessens. The incompatibility of P and R decreases, and R's chances to survive get better the longer it manages to do so. P as well as R can only be conquered by their own fault, namely by neglecting their efforts to improve on their ACIs by continuously developing the formalisms "r" and "p."

Chances are, though, that R will not acquire ACI in the first place. Its attitude towards technology is a hostile one, and it does not possess the R & D facilities required. P, on the other hand, is impeded by its fractioning. It will develop ACI against its own fractions instead of against R. World War II is an example in place. The R-powers Germany and Japan were defeated by the P-powers Anglo-America and Russia. Had Japan in 1941 possessed ACI, then, in this ACI, the P-powers - as well as third party powers - would have been represented in the environment of that ACI. The agent, scanning the environment by its r-dynamics, would have categorized the states represented into powers compatible with the future of Japan and those incompatible with it. The first category would have comprized the third party powers, while the foes would have made up the second. The best possible strategy to follow, easy to see for human minds as well as suggested by the restless agent, would have been to attack Russia instead of conquering a vulnerable third party island empire. Russia would have been divided between Germany and Japan at the Ural Mountains, and for the P-powers remaining there would have been little chance and lesser motive to attack this continental bloc. The war would have come to an end, and from this geostrategic stalemate the long lasting stagnation would have resulted that is characteristic of unconquered R-powers.

Instead, as well the P- as the R-coalitions broke apart, from which new wars arose. Wars originate, following a natural law, from the competition between incompatible time horizons for the same space. Should R refrain from developing ACI, while P would do so, then no time horizon "r" competing with the "p" of P would exist, and R would founder without having fought. Should, against all probability, R own ACI with P lacking one, then R would smash P by indefinitely fractioning it further by means of terror and extortion. Thus, R needs ACI much more urgently than P does, in the same way as the R-powers of World War II would have needed the technological advantages of their enemies much more dearly than the latter did, who actually possessed them.

The ACI wars of the future will be total wars, without armistices and conditional surrenders, this not because of ACI, but because ones relation to time is not at ones disposal. There is no choice of which one time-horizon one belongs to, and there is only victory or defeat in being part of one bloc or the other. - Should, as is widely and erroneously believed, ACI not be available until several decades from now, or, as some maintain, should it prove even to be totally unfeasable, then mankind would perish in a Babylonian confusion of mentalities that fight each other for survival.

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