

# EFFICACY, THE HEART OF CRITICAL THINKING

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## **Abstract**

Thinking critically is to reach the best explanation for a fact, a phenomenon or problem, with a view to being able to solve it. This definition is the best one that occurs to me for expressing what I believe is the lynchpin of CR\*. When understood in this way, I am saying that efficacy is the only true introductory letter to CT\*. Moreover, I contend that this is the most appropriate way for attaining suitable wellbeing or personal happiness and therefore to convince ourselves that proper thinking is one of the most interesting activities with which we can entertain and enjoy ourselves, if only for the knowledge it brings. As people, above all we seek solutions to problems, the ways to achieve our aims. For many, thinking must be a tool with which our needs are met. Enjoying knowledge may come later, not before. Before, we must appreciate the need for reflection, and afterwards, when there is nothing better to do, we might end up discovering that knowledge is a goal in itself.

But this is only the end of the story, the “sweet spot”, the one we want to hear and the one that persuades us of the goodness of critical reflection. Despite this, in order not to fall into any trap, it is appropriate to recall that stories are always bitter-sweet. It is highly recommendable that we should understand that to reach that goal we must travel the sinuous pathways of effort and perseverance; that without these paths nothing can be achieved and nothing is gained. Developing a good capacity for observation to “discover” relevant facts and accord them a unique meaning, hand in hand with an explanation (which is also unique), demands tenaciousness, dedication and even a certain attitude towards life; namely, the one emerging from the obsession about always finding the exact meaning of things, the one that arises from always believing that the world (including people) is neither just nor unjust and that good and evil in the world depend on the nature of the causes underlying them. The “whys” are never neutral and the essence of good thinking rests upon the search for authentic and very unique questions. The thesis I shall defend is therefore quite simple: critical thinking cannot stand alone without unique explanations, the best ones, and maximum efficacy cannot be attained without them.

## **1 - INTRODUCTION**

*Cowardice asks, "Is it safe?" Expediency asks, "Is it politic?" Vanity asks, "Is it popular?" But conscience asks, "Is it right?" and the time arrives when one must take up a position that is not safe, or political, or popular. But you must take it up because it is correct*  
(Martin Luther King, 1929-1968)

“I have a dream...”, that human beings can live together in freedom, equality, justice, dignity and wellbeing as a person. But this is a dream and dreams are... well, they are dreams. Reality is different: that of the lack of a large part of the above in today’s world. And this reality must change, because it means that

people cannot reach their dream of dignity and hence of wellbeing or happiness. Regarding social change, today we mainly aspire to contemplating it and, at best, to labelling it. Social and historical changes are today a global and cross-generational issue in which our contribution is through delegation to what is collective, by contribution together with thousands of others to what is collective. However, personal change is one's own business; personal growth is a question of a single will –our own. And this change can be reached despite the deterioration or involution of today's society. Our own personal development depends on this commitment. And within what we can change, and what may affect our wellbeing and happiness lies the ability to understand our surroundings, the ability to predict events and anticipate them in order to adapt, all with a view to achieving personal wellbeing and, indirectly, social wellbeing. To accomplish this, I believe that there is consensus that the best tool is good judgement or proper thinking, at least in this forum. And, again, regarding this tool I imagine that there will be agreement that it is the most ambitious and at the same time the most elusive one.

Managing to progressively think better is perhaps the most passionate project and, in turn, the most disheartening one for all. Passionate because we cannot think of anything else to investigate, of anything that will provide greater benefits than a mind equipped with the best of abilities to interact with our environment in order to meet its challenges in the best way possible. Disheartening because it follows the inverse order of a good investment: “buy cheap and sell dear”. Here, “we buy very dear and sell very cheap”. Achievements are few and far between and are costly and time-consuming. And if this were not enough, we do not even know whether they persist after they have been made; that is, we do not know when our investment will vanish into the ether. Nevertheless, investigation how to improve the skills of critical thinking has always seemed, at least to me, to be something worth doing. In fact, our team has been involved in this for a fair number of years (see: [www.pensamiento-critico.com](http://www.pensamiento-critico.com))

## **2 - DIAGNOSTIC**

Improving the skills of critical thinking or learning how to think critically is so unprofitable, or at least it is certainly not as profitable as it might be, because we are currently passing through a period of stagnation that needs to be reactivated with a change of focus. We find ourselves at a moment where for some time there have been no advances or where no progress is being made along the pathway towards a better development of critical thinking. This is my diagnosis, the reason why a specific treatment should be proposed. And this is the thesis that I would like to share with the participants at this seminar, in particular, and with anyone interested in the field in general. Let us first take a look at the diagnosis and then move on to the treatment.

In order to understand the current stage of stagnation it is essential to understand its origins. We shall sugar-coat this pathway through the use of an analogy or a metaphor. We know that matter can only be transformed and that organisms are matter; it is evident that they too are transformed. Let us consider our own field, critical thinking (CT) as a living organism. This, like all living things, grows, reproduces or expands, dies, and is transformed. The life cycle is always the same: where and when was our organism-CT born? We shall all agree that it derives from the Greek origins of our culture (the one we are most familiar with, although let us not forget that there are others). However, if we look at more modern times, perhaps we shall have to admit that our origin is essentially philosophical, born of informal logic and from seminal works such as that of Toulmin (1958, 2003) and those of our eminent speaker Robert Ennis (Ennis, 1956). The chief objective of these initiatives was to seek a single way of dealing with all forms of reasoning, both formal and informal. This has borne fruit in the form of most of what is known as *argumentation* (also called *practical or critical reasoning*). And this continues today to form the major part of our organism-CT (first symptom of stagnation). We understand that argumentation had to be the protagonist of critical thinking during its growth, of course this is so. But whether it should continue to be so now is quite another question, and I believe that it should not. The fact that being a protagonist is no longer sufficient does not remove even one iota from the importance it has and continues to have in the field. It suffices to recall key contributions, again such as those of Ennis (1969), or those of the Canadian group such as Johnson, Blair, Govier and Walton. The contribution from American universities is also very important. The group including Paul, Facione, Ficher, Bassham, Moore, Parker, Fogelin, Tittle... has contributed by incorporating other skills such as problem-solving or decision-making (Bassham, Irwin, Nardone & Wallace, 2012; Facione & Gittens, 2013; Fisher, 2011; Fogelin & Sinnott-Armstrong, 2005; Moore & Parker, 2014; Paul, 2012; Paul & Elder, 2012; Tittle, 2011).

This is the birth of our organism CT and its early development from the hand of reasoning. Although its most important progenitors are philosophical, they are not the only ones. From the field of education, Dewey, Whitehead and Perkins (Dewey, 1933; Perkins, 1987; Whitehead, 1929) have contributed the applied spirit to the field. Psychology also adds its grain of salt with concepts about mental processes and with the incorporation of fundamental skills- which must have full rights in the world of CT - such as decision-making and problem-solving. Authors such as Halpern and Baron are a good example of this (Baron, 2008; Halpern, 2007, 2014). Notwithstanding, it is necessary to recognize that there is some discrepancy in this development; in whether it is CT or not. The strong influence of argumentation lies behind these divergences. Thanks to these healthy differences in the way of “feeding” our organism-CT, we can ensure that it will be

very pragmatic. Let us say that its birth was essentially conceptual, since informal logic leads argumentation to expand, but not to its development or growth, since the “care” it receives from education orients it towards what is applied; care drives it to claim as a primordial goal the improvement of the organism-CT. In turn, psychology adds the vital organs that were lacking previously. In short, what we currently have is an organism-CT that is reasonably well developed at this time of its life cycle, let us say its youth, but is still not mature enough. And at this moment of development its outreach is essentially applied and oriented towards education; no more nor less. However, its potential is much greater than that seen at first glance. It can be much more efficient, and in any applied environment. Let us say, in football terminology, that it is a team that plays the ball well, has great technique, but is too involved with technique and forgets about the goal to score in. It does score goals, but far fewer than it could. This team has a lot of technique but gets lost in it. It forgets that first you have to win and then you have to play well. As I said, we find ourselves in a time of stagnation that we must overcome. This at least is our diagnosis.

Having arrived at this point, we should look at some of the reasons that sustain our diagnosis of the stagnation of the field and, also, how such a situation can be treated. For problems of time, let us tackle the justification of stagnation and treatment at the same time. We have gone over infancy-adolescence and youth, and we now pass to dealing with the maturity of our organism-CT. In the first stage, we have seen the addition of the vital organs; from informal logic a general model or argumentation has been proposed as a way of understanding critical thinking (Baron; 2008; Toulmin, 1958, 2003). In its second stage, these vital organs (argumentation) have expanded towards others, although no less important, such as decision-making or problem-solving. However, in this period of youth we are now moving with an essentially applied view of such organs; that is, with the unequivocal purpose of ensuring that those organs will work as best as possible in the achievement of our goals. Although there are still different ways of understanding what critical thinking is, there is some consensus about the issue. That is, doing something critically is to set in motion these mechanisms of thought with a view to achieving our goals. Nevertheless, the developmental period in which we find ourselves, the stage of maturity we wish to enter, is still not well demarcated. To do this, we must pass from words to deeds, from aims to actions, and from good decisions to their execution.

Thinking critically implies achieving our aims *in the best possible way*, not just anyhow but in a way that is better than any others existing. Without this assumption, there would be no sense in talking about “critical”; it would suffice to use the word “thinking”. The adjective *critical* can be understood in different ways but there is an unequivocal one that will always be better than the rest. I refer here to the one whose meaning is equivalent to *efficacy*. It is some time now that

this idea has faded from our attention and is now taken for granted, but it has not been possible to set the search for efficacy in motion as well we might have done. In other words, it is not being used as well as it should be. To speak of efficacy is to assume that there is one way to do things that is better than the rest. This idea implies a normative mode of action, a strong bet that evidently is not always defended or sustained because it is carried out in an inconsistent or contradictory way. Therefore, it is not possible to state that one is thinking critically and at the same time that “critically” is an efficacious way of thinking, instead of understanding that it should be the most efficacious way of thinking. If we do not accept that here may be a better way of thinking critically, we must also accept the uselessness of the adjective critical. Fear not, there is no conceptual totalitarianism or defence of an absolute truth here, far from it. What we defend is that it is possible, within a given space of time or in a particular context, to be able to offer *the best solution possible to a given problem, here and now*. To consider this is to understand that the maturity of critical thinking necessarily demands the passage towards *efficacy*. The question is: how can we achieve this? Our proposal is to change its centre of gravity, passing from argumentation towards explanation: *towards the best explanation*.

To date, sound argumentation was the basis or the reference model in critical thinking. A general model of argumentation, taken from Toulmin (1958, 2003) and adapted by most authors working in the field, serves to integrate most of the skills of critical thinking. There are different ways of reasoning (propositional, analogical, causal...) that fit in well with this integrating framework. There is always an idea that is supported by others, resulting in a judgement with a certain solidity. The great virtue of this model was that of allowing us to deal with all forms of human reflection possible in a simpler way, beyond the formalism of logic or deduction. With a few concepts, such as conclusions, reason, solidity and little more, we can explain nearly all the mechanisms of human thinking. A sound (solid) argumentation would be the basis of a good decision and this in turn the best way of starting to reach a solution to a given problem. The drawback of this reference model is not that it fails to defend efficacy -as we saw- as what should be distinctive about critical thinking, because it does. The question rests on the *how*, not on the *what*. It is not an question of *what* it is but about *how to achieve it*. I was suggesting before that to fully reach maturity we must replace this paradigm by that of explanation, or more precisely the best *explanation*. Inherent to this new approach is *the germ of change*, since seeking the best explanation is not an essentially conceptual goal, but rather a *practical* one. We are not trying to know why such or such a problem or phenomenon occurs, by pure intellectual effort, but also to discover how we can change it or solve it. Actually, what we believe should be modified is the purely conceptual view of efficacy; what we need is *to achieve the best results using minimum, although the best, resources*.

And this would indeed be a good *theory of investment*: namely, invest little and achieve much. Simply by reviewing the work of many investigators in the field of critical thinking (Bassham et al., 2012; Brookfield, 2013; Ennis, 1996; Facione & Gittens, 2013; Fisher, 2011; Halpern, 2007, 2014; Moore & Parker, 2014; Paul, 2012; Paul & Elder, 2012; Tittle, 2011), we would see that this position is only conceptual. We need to apply it, and to do so we need to get inside the process of learning, first in the way that we are best at, and later in a wiser manner.

### **3 - TREATMENT**

How can we find the best explanation of maximum efficacy? Until now we have been attending to the factors known to improve critical thinking and, later, we have applied them. Skills involve procedural knowledge and therefore require a lot of practice. We also know that these skills must be well defined, such that specifying them is useful. Accordingly, the first important step is to maximize practice and achieve maximum specificity. Being aware of the importance of these factors is also to enrich our knowledge through *metaknowledge*. Despite this, we know that - with greater importance than all the above (practice and specificity) - there are even more important aspects, such as the wish or will to progress, gaining knowledge or solving problems. Someone once said that knowing begins with *wanting*, in its dual sense. Some time ago now, Whitehead (1929) defended the idea that there is no learning without interest.

However, we have nearly always forgotten something crucial and determinant about efficacy: nothing is said or suggested about the *nature of the results*. We saw this earlier: we must play with the ball but above all we must score goals. Without good results, interest wanes and the sensation of impotence is strengthened. No emphasis is placed on the best results, on the best way to solve problems, only about their solution. In the case of an engineer, for example, if we ask him or her to solve the problem of crossing a river, we do not merely ask him or her to build a bridge; we demand that it will not collapse. If we ask a psychologist to choose between several people who are trying to adopt a child, i.e. the most suitable couple, we do not ask him or her to discriminate between heterosexual, homosexual, monoparental... Couples. We ask him or her to decide which one will provide the most benefits for the child. Accordingly, the first thing we believe should not be overlooked is to give the psychologist the maximum prominence in the task of solving the problem in the best way possible. We should insist not only on a good way but on the best way. This is an important lacuna in our organism-CT. The second lacuna, because it derives from the first one, is how this can be achieved. Until now, as we have said, we have grown conceptually and with an emphasis on application with a model of argumentation, not of explanation. We have also said that, conceptually, causal, hypothetical... reasoning is taken into account, although mainly in the service of a solid

argumentation. And this is so due to one advantage inherent to it. Argumentation can refer to values and realities, but explanations only to realities. This is an important benefit if we are moving within a theory of argumentation instead of within a theory of action (Saiz, 2009; Saiz & Rivas, 2012). Accordingly, we opt for a broader paradigm, one that is less limited. Nevertheless, this is not quite true, at least for our goals of producing change. Values always affect our behaviour and acts. Thus, indirectly, in the long-run values are also realities, at least for our goals, because what is important are facts and not intentions since we know of no other way to know about the existence of values/intentions than through their manifestations. Once we have established that the paradigm of explanation is not a drawback but what is most suitable, then we can move on the issue of *how to do it*.

We were saying that in our organism-CT all skills are considered, but one more than the others, which produces a dysfunction. In order to “invest little and obtain more” this strategy is not the most profitable one. To achieve maximum efficacy it is not necessary to treat all the skills of thinking equally or accord them the same importance, and not even necessarily work all of them. For example, it is easy to understand that causality cannot be given the same importance as a generalization because, technically, generalization involves less reasoning than the former (causality), among other reasons because generalization is the first step in the establishment of causal relations, such that a generalization alone would eventually remain “unfinished”. To fill in this second lacuna, our proposal is to attend to *three fundamental aspects*: learning to “look”, learning to combine structures and causes and, finally, learning to rule out explanations or hypotheses.

An experience teacher of secondary school Spanish language once said that we make great efforts so that our students can learn to read and write, but we say nothing about learning how to listen. This perhaps seems to be so because oral speech feels natural, close to us, and does not need previous teaching, since we manage well with it; we understand one another and we can communicate without special difficulties. But what this wise teacher wished to point out was exactly the opposite. Oral speech is very slippery, imprecise, changing and unstable. This is not the case of writing because it is fixed on paper or on a screen. Oral speech is like life: it does not permit moviola; it advances and the best we can do is to build it again, if we have luck. Precisely owing to this greater difficulty, oral speech requires greater attention from the point of view of learning. However, the opposite occurs: very little time is devoted to this matter. We find the same situation in our organism-TC. Most efforts aimed at its development are used by us to acquire a good knowledge of the different skills of CT. By contrast, we still await the discovery of a space devoted to *learning to observe facts* in a contextual way. As above, context is what marks what is crucial in all thinking processes;

outside it, everything is possible and nothing is real. The problems we wish to solve daily arise at a give place and in a given moment, and this means that facts are not something abstract. But this tends to be forgotten, facts are dealt with “only on paper” such that it is well nigh impossible for them to be seen or observed well. The really important facts must be hunted out, they must be discovered, and we should not merely stumble upon them. Quite often, what is evident and important is overlooked, or what we believe to be important is not actually so, or the small details which might be crucial escape us. Discovering really important and decisive facts requires a skill that is not learned; it cannot be taught. We do not know how to “listen” to the data, to the real facts. Without this, judgement or reflection cannot be successful. It is therefore essential to learn how to look at what is really important and ensure that none of it falls on the wayside. This is the first strategic bet in our new learning trilogy: to ensure that our organism CT will mature, reproduce, and become transformed.

The second and third stances cannot be separated since they involve knowing how to combine the facts of contingency relations with procedures of disconfirmation. Let us imagine a daily situation, unfortunately quite frequent. In a family there is a fixed wage as the only source of income; there are no other funds and expenditures are higher than the earnings. It is expected that the family will have debts, but there are none. This is the situation and the real data. The only explanation is that it is not true that the expenditures outweigh the earnings but we know that this is not the case; that there are more expenditures than earnings. How can we explain this? Either someone really receives more income from other sources or someone is obtaining money illegally, by stealing for example. In this situation (of a real case) we only have these two possibilities: the income obtained from other sources does not exist, and we are sure that this can be demonstrated (as indeed happened) With this procedure of disconfirming a hypothesis, combining facts and principles we try to show that we can make an explanation not only highly probable but also completely true, let us not forget this, within a particular context. One of the bets on efficacy and for the best explanation lies precisely in this. Critical thinking allows the probable to be converted into the true, if we play our cards well.

#### **4 - FINAL CONSIDERATIONS**

Being able to achieve the best results with the fewest resources is a goal that can be met if we proceed in this way. In another sense, our proposal aims to emphasize procedures that allow the demonstration that an explanation of a certain problem is unique, safe and true. With appropriate observation, a correct combination of facts and principles, and a precise use of disconfirmation procedures, we achieve maximum efficacy in problem-solving. This is what we call CT, or at least how we understand it. We all know that a science improves as



its need for the use of statistics, of probabilities, gradually declines. Mathematics and part of physics are at the summit in this since they are able to demonstrate and predict with certainty, not with a certain degree of probability. When we say that critical thinking is achieving the best explanation of something, a phenomenon or a problem, we mean that there can be no other explanation, at least in that context. Having achieved this, the solution or prognosis becomes something almost algorithmic and sure. This way of understanding critical thinking is the summary of a manner of learning developed and verified by us (Saiz, 2014), which we have termed DIAPROVE (DIAGnosis, PROgnosis and VERification), But this is another story that perhaps we shall tell soon.

As we started, so we finish: “– *and the time arrives when one must take up a position that is not safe, or political, or popular. But you must take it up because it is correct*”.

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