Chapter 5
"Some Stages of Logical Thought": From Native Certainties to Acquired Doubts

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Abstract This chapter explores some basic tenets of pragmatist philosophy of logic to inquire into its fruitfulness to understand diverse patterns of thinking. Reference will be made to C. S. Peirce theory of reasoning as developed in his famous paper "The Fixation of Belief" and to John Dewey's mature logic of inquiry. The different phases of Dewey's philosophy of logic are examined in turn. It will be contended that Dewey completes the process of naturalization of thinking begun by Peirce, developing an anthropology of thought and logic that places the practice of doubting at its heart. The upshot of the paper is that doubting is at the same time a practice which demands training and the potential source of a pleasurable experience, provided an initial fear of incertitude is overcome. The paper follows the various logical stages through which the ambivalent value of doubt is dealt; the evolution that is observed at the level of humanity, of individual growth, and of western civilization.

Keywords C.S. Peirce · John Dewey · Pragmatism · Inquiry · Doubt · Philosophy of logic · Naturalism · Anthropology · Evolution · Native logic · Science · Discovery · Judgment

Mathematics Subject Classification Primary 00A– Secondary 03-03 - 03A – 03B

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J. Brumberg-Chaumont, C. Rosental (eds.), *Logical Skills*, Studies in Universal Logic, https://doi.org/10.1007/978-3-030-58446-7_5

5.1 Introduction

In 1900, at the age of 41, John Dewey publishes an article of logic titled "Some stages of logical though" [1] which, as the title implies, attempts to identify "stages" in the development of logical thinking. The evolutionary intuition implicit in the idea of stages provides a promising entry point to assess American pragmatism's contribution to the study of native logic. While it is Charles Sanders Peirce who, more than any other representative of this philosophical tradition, has provided long-lasting contributions to the advancement of logical theory, in this paper I will also draw from John Dewey's legacy to propose the outlines of a pragmatist theory of native thinking.

At the basis of the pragmatist approach to logic stands a practice-based concern for the concrete process of thinking. Blurring somehow the lines between logic and psychology [2], pragmatists were mostly concerned with beliefs as action-orienting states. Their overarching concern—Peirce's starting point—was to understand how human beings go about fixing the beliefs that will guide their actions. Logic, to this extent, is understood as being action-orienting, rather than truth-tracking. Logical thinking is, then, the process whereby human action is coordinated and made effective. To that extent, both Dewey and Peirce conceived thinking in the terms of a *doubt-inquiry process,* rather than in those of copying propositions to facts. Within this action-oriented approach, what logic should study, in historical as well as in normative terms, are the methods, proceedings, and practices through which beliefs are stabilized in practice, the methods whereby human beings solve the deeply practical question of deciding how to act, so that action can unfold, unimpeded. To this extent, logic has to do more with doubt that with truth. Its task consists in making the practice of doubt productive for the sake of intellectual inquiry into theoretical as well as practical matters. Both Peirce and Dewey developed taxonomies to identify and distinguish different methods through which this function is fulfilled. In an evolutionary perspective, they unfold as "stages" of logical thought (Dewey), whereas in a more systematic approach, they are conceptualized as "methods" for the fixation of beliefs (Peirce).

Since the question of the comparative merits of Dewey's and Peirce's logical standpoint has already received a large share of academic attention, this paper will examine this theme from a different perspective. I will endeavor to show that Dewey's idea of stages of logical thought adopts and dynamizes the Peircean idea of rationality in a way that proves more fruitful to inquire into the very idea of logical skills and their very first developments, to which this volume is devoted. By "adopting" I mean that Dewey consciously inscribes his conception of logic within a theoretical framework whose basic tenets were set by Peirce, whereas by "dynamizing" I mean that he transforms the ahistorical (systematic) exposition developed by Peirce into an evolutionary account explaining how logical thinking evolves, moving from one stage to the next, from the "infancy of logic" to a full scientific method.

As said at the outset, Dewey proposes to conceive the stages he identifies and discusses in terms of an evolutionary approach that is to say as steps in the historical evolution of the human species as well as steps in the psychological evolution of individuals. To that extent, there is a correlation between life forms and logical forms, which basis is behavioral, mediated by action as it is shaped by situational circumstances.

As a consequence of his pragmatist method and polemics with the theorists of primitive mentality of his day, the stages through which human thinking is said to evolve are not defined in terms of an improved capacity to attain truth. In that sense, we do not find in Dewey the idea of a transition from magical or religious to scientific thought, as was the case, for example, for Lucien Lévy-Bruhl, or Edward Evans-Pritchard. His perspective is, indeed, different, since he suggests to see the stages of logical thought in terms of a succession of different techniques whereby human beings succeed at calming the doubts that constantly disturb their intercourses with the world. Dewey sees the evolution of the human mind precisely in terms of a changing attitude towards the practice of doubting, of an increased capacity to passively endure and, later, actively entertain doubt for the sake of forming beliefs that are more effective in the control of action. It is the history of a technical mastery upon the uncertainties of life where an improved capacity to doubt takes the lead in the evolutionary mastery of action of the external world. From the vantage point of the species as well as of the individual, the evolution of thought is, therefore, inseparable from the transformation of our attitude toward doubting.

From the pragmatist standpoint, therefore, if the infancy of logic is characterized by the fear of uncertainty and by the revulsion against doubt, then intellectual maturity is qualified by a kind of mastery that can be appropriately described in the terms of a newly discovered *pleasure of doubting*.

Before going further into this exploration of Dewey’s theory of the stages of logical thought, in the next section I will briefly recall the basic tenets of Peirce’s theory of logic, and particularly his well-known taxonomy of methods for the fixation of belief. This quick detour will provide the background against which I will suggest to read Dewey’s logical theory and to offer some keys to interpret its meaning for understanding the history of logical forms.

5.2 Peirce: Rationality as the Fixation of Belief

“The Fixation of Belief” is probably the most famous paper ever written within the pragmatist tradition. It is nearly unanimously considered one of the building blocks of its epistemology, and provides the obligatory entry point for any account of its theory of logic. In this paper, published by Peirce in 1877, we possibly find the clearest pragmatist definition of the nature of thought and, accordingly, of the task of logic.

Peirce’s take on the place of logic in human life starts off in evolutionary anthropology. As Peirce explains:

> Logicality in regard to practical matters … is the most useful quality an animal can possess, and might, therefore, result from the action of natural selection; but outside of these it is probably of more advantage to the animal to have his mind filled with pleasing and encouraging visions, independently of their truth; and thus, upon unpractical subjects, natural selection might occasion a fallacious tendency of thought. [3, p. 112]

This revulsion against doubt is a natural state for human being, something which is native to us, since we come to the world endowed with it. We see here emerging a tension between the positive consequences of logical thought—the control of action—and the negative effects of its exercise—psychological suffering associated with the pain of doubting. This perspective sets the stage for a sort of medical trade-off between the benefits of doubting and the displeasurable effects engendered by this activity. In Peirce's terms:

> Doubt is an uneasy and dissatisfied state from which we struggle to free ourselves and pass into the state of belief; while the latter is a calm and satisfactory state which we do not wish to avoid, or to change to a belief in anything else. [3, p. 114]

For the purposes of this article, it is important to stress that according to this pragmatist view point, truth plays no function in the general definition of the function of thought. Indeed, as Peirce himself clarifies:

> The sole object of inquiry is the settlement of opinion. We may fancy that this is not enough for us, and that we seek, not merely an opinion, but a true opinion. But put this fancy to the test, and it proves groundless; for as soon as a firm belief is reached we are entirely satisfied, whether the belief be true or false. [3, p. 115]

If there is a difference between ways of thinking, or between infant and adult logics, it will then not concern their different capacity to achieve truth, but rather their different way to bring stability to our systems of beliefs. Peirce then defies John Stuart Mill's moral view that it is better to be a dissatisfied Socrates than a satisfied pig. In the naturalistic terms of pragmatist logic, there is no room for a moral interpretation of logical thinking.[1]

As it is known, Peirce distinguishes between four major methods that human beings have developed with the aim of fixing their beliefs. Peirce is not interested in how human beings came to identify these methods, nor on their real diffusion across peoples, cultures, or ages. His point of view is the perspective of the logician, and his concern is with the logical specificity of the methods. What he aims to do, is to provide a logical typology rooted in the psychological structure of human mind.

The first method identified by Peirce is *the method of tenacity*. This method simply consists in clinging to one's opinion without ever leaving room to the possibility of doubt. This is the degree zero of inquiry, since doubt is rejected from the start. The advantage of this method lies in the maximization of the pleasurable quality of certainty. From a naturalist standpoint, this method makes perfectly sense, and as long as it works, no objection can be moved against it. If human beings could live

[1] For recent interpretations of Peirce's logic as naturalistic, see [4, pp. 127–149]; [5, pp. 65–75]; [6, pp. 18–31].

without ever facing the unsettling experience of uncertainty, they would be the happiest living creatures. The problem of this method, however, is that it cannot stand to its high expectations. Its biggest fault lies in its incapacity to take the standpoint of others into account. Once two individuals confront each other with contrasting beliefs, the method of tenacity leaves them with a clash they are unable to surmount. Its failure, in this sense, is more social than psychological: it may succeed in fixating the beliefs of an individual, but not those of a community.

The second method introduced by Peirce is *the method of authority*. Like the first one, this method too is to be found in the majority of human societies. Here the social dimension of belief is taken into account, and the problem of disagreement raised by the first method is solved through a social mechanism which assigns to selected individuals the power to establish the beliefs that all the others will have to adopt and follow. Culturally speaking, this method has been much more successful than the previous one. Its practical success has been such that in many everyday circumstances, even today, human beings continue to rely on this method to fix their beliefs.

A third method, that Peirce calls *a priori*, emerges out of the deficits of the second, insofar as the institutional or authoritarian conditioning of individual opinion can never be complete—not even in totalitarian states—so that sooner or later forced imposition loses its legitimacy, and “a different new method of settling opinions must be adopted, that shall not only produce an impulse to believe, but shall also decide what proposition it is which is to be believed.” [3, p. 118]

The basis of this new method is agreement achieved through communication. This method, to be found in all great civilizations, is for Peirce tainted by its methodological lack of resources for securing stability to beliefs, insofar as it does not provide a solid ground for producing agreement out of the plurality of individual beliefs.

Peirce’s solution to the instability brought in our beliefs by the social impulse is offered by a method, actually the only one, capable of anchoring beliefs to reality, that is to say to something which is independent from human mind, “something upon which our thinking has no effect.” This is *the method of science*.

While I’ am not convinced that Peirce’s theory of the fixation of belief can deliver relevant hints for a general discussion of logical forms like the one here pursued, Dewey’s reformulation of his basic intuitions is much more pertinent, and it is to it that I now turn.

5.3 Dewey’s Evolutionary Account of Thinking

Dewey expresses in the clearest terms his acceptance of Peirce’s model of human thinking when he claims that “the natural tendency of man is not to press home a doubt, but to cut inquiry as short as possible.” [1, p. 152]

Avoiding doubt and uncertainty is a natural tendency for human beings, one that aptly describes the infancy of logic at the level of individuals as well as of the

human species. In the longest part of human history and, for many individuals, in the longest part of their life, doubting is associated with irritation, displeasure, and suffering. Whatever unsettles beliefs and calls for efforts at resettling them is seen with suspicion. The proximate justification for this natural attitude lies in its psychological bases: doubting is unpleasant and human beings strive to avoid suffering.

Yet, as Dewey contends, this attitude has a major downside, which is its poor effectiveness at stabilizing the beliefs which guide our actions. This fact creates a sort of pragmatic contradiction, since the avoidance of inquiry intensifies the need of inquiry itself: the worse we fix our beliefs, the more they will be challenged by reality, and the more we will have to face some degree of displeasure. Hence the idea that a natural history of human thinking can be written, one which shows how our mastery of the doubt-inquiry process has developed in time. It is the history of how human beings have gradually accepted the lesser evil of doubting in order to avoid the greater evil of existential uncertainty.

This process of evolutionary improvement can be described at three levels:

1. at the level of humanity, as a way out of ancestral ways of thinking in which symbolic mastery of the environment, rather than technical control, are used to stabilize beliefs;
2. at the level of individual growth, as the process of individual maturation from infancy to adulthood;
3. at the level of western civilization, as the evolution of epistemology from its first awakening in Rome till the advent of experimental science.

Dewey refers to all these three processes to exemplify the properties of the four stages. To that extent, the idea of stages does not presuppose an opposition between civilized and uncivilized human beings, but rather a contextualist understanding of reasoning as an action-oriented method. Yet, as the evolutionary idea implies, the stages indicate a line of progressive improvement. This tension between a thorough contextualism and a normative take on the value of the different methods is somehow endemic in this approach, for reasons we shall discuss later.

In a rather programmatic way, Dewey writes:

> I wish to show how a variety of modes of thinking, easily recognizable in the progress of both the race and the individual, may be identified and arranged as successive species of the relationship which doubting bears to assurance; as various ratios, so to speak, which the vigor of doubting bears to mere acquiescence. [1, p. 151]

Let us then see how Dewey describes the four major stages of logical thought.

5.3.1 The Denial of Doubt and the Logic of Judgment

The initial stage is where the doubt is hardly endured but not entertained; it is no welcome guest but an intruder, to be got rid of as speedily as possible. Development of alternative and competitive suggestions, the forming of suppositions (of ideas),

goes but a little way. The mind seizes upon the nearest or most convenient instrument of dismissing doubt and re-attaining security. [1, p. 152]

The first stage is characterized by a nearly complete removal of doubt. Similarly to what Peirce dubbed “the method of tenacity,” stubbornness and the reject of any belief contradicting ours dominate human thinking at its (evolutionary and psychological) beginning.

Shortly later, Dewey explains further his ideas by saying:

> In the first stage of the journey, beliefs are treated as something fixed and static. To those who are using them they are simply another kind of fact. They are used to settle doubts, but the doubts are treated as arising quite outside the ideas themselves. Nothing is further from recognition than that ideas themselves are open to doubt, or need criticism and revision. Indeed, the one who uses static meanings is not even aware that they originated and have been elaborated for the sake of dealing with conflicts and problems. The ideas are just “there,” and they may be used like any providential dispensation to help men out of the troubles into which they have fallen. [1, p. 152]

The logical meaning of ideas lies in their capacity to fix beliefs and dispel doubts in the fastest possible way, which is to say by rendering the connection between beliefs and actions automatic.

The external juxtaposition of facts and ideas describes a situation where criticism is totally absent, a situation of epistemic passivity that Dewey associates to primitive ways of thinking. As he explains:

> We find an apt illustration of fixed ideas in the rules prevalent in primitive communities, rules which minutely determine all acts in which the community as a whole is felt to have an interest. These rules are facts because they express customs, and carry with them certain sanctions. [1, p. 154]

This way of fixating beliefs is by no means exclusive to primitive people, and indeed it can be spotted even in contemporary ways of thinking, anytime traditional norms are used to settle and confirm beliefs.

Contrary to his contemporary anthropologists such as Lévy-Bruhl, and in explicit opposition to social evolutionists such as Herbert Spencer [7], Dewey sees a deep continuity between primitive and modern ways of thinking. Whereas his contemporaries understood primitive thinking in terms of fallacious ideas and irrational ways of thinking, Dewey conceives the evolution of thought in terms of a progressive differentiation among methods of inquiry. To this extent, he is adamant that prescientific methods for dealing with doubts and fixing beliefs, far from having disappeared with the advent of modern science, continue to permeate contemporary life.

In continuity with Peirce’s appreciation of the method of authority, Dewey admits that:

> The conserving value of the dogmatic attitude, the point of view which takes ideas as fixed, is not to be ignored. When society has no methods of science for protecting and perpetuating its achieved values, there is practically no other resort than such crystallization. Moreover, with any possible scientific progress, some equivalent of the fixed idea must remain. [1, p. 156]

I want to turn your attention toward Dewey's observation that this stage is indeed already a stage of logical thought, rather than a stage of pre-logical thought. As he explains, talking about the way doubts are dispelled by a "judicial procedure," fitting each doubtful case under a fix idea, a pre-established rule, "this point of view has tremendously affected the theory of logic in its historic development." In this sense, we can rightfully talk about a primitive logic. Yet we are still in the infancy of logical thinking. More properly, we are confronted with a stage in which the normal attitude enforced by "instruction" is utterly alien to doubt, as thus, to thinking. As Dewey explains, when this instructed attitude is passively followed, and "ideas are doubly removed from the sphere of doubt," "there is a pre-judgment rather than judgment proper" [1, p. 155].

When this way of fixing ideas that Dewey associates with the social function of cultural transmission becomes generalized, the results are, therefore, uncritical ways of thinking which lead to social conservatism. This way of thinking is not only pragmatically ineffective; moreover, it has also undesirable socio-political consequences.

The two dimensions for Dewey are intertwined, as conservatism does not refer to a political attitude but, rather, to the uncritical preservation of customs and institutions beyond their effective social function.

5.3.2 Thinking as a Logic of Discussion

A second stage of logical thought is attained once fixity of beliefs ceases to be the only way to control action. At this stage, ideas begin to be perceived as correlates of cognitive acts that is to say as the intentional product of the mind. This implies the overcoming of the passive attitude found in the first stage: ideas are no more found, they are created. As creation implies change, ideas lose their original fixity: they are no more external entities such as objective facts, and the question of their stability becomes a social question.

As Dewey clarifies:

> When we substitute for ideas, as uniform rules by which to decide doubtful cases, that making over of ideas which is requisite to make them fit, the quality of thought alters. We may fairly say that we have come into another stage. [1, p. 157]

The attainment of this second stage is accompanied by an increase in uncertainty, the volatility of ideas, and, therefore, the need for more critical tools for the stabilization of beliefs. In a way that reminds of Peirce's third method, Dewey insists that the major challenge brought about by the second stage concerns the internal consistency of systems of ideas. The result is a quest for generality which Dewey describes in the metaphorical terms of a transition "from the 'judicial', where a case is just fitted into a fix rule, to the 'legislative', where the attention is drawn to the law one is willing to follow when dealing with a doubtful case." He also refers to the advent of the prophet as against the judge as paradigmatic man of knowledge.

Whereas the judicial model reduced the act of thinking to the mechanical application of pre-given rules, the legislative model conceives it in terms of the search for the most appropriate generalities that will then be used to guide action. As it was the case for Peirce, for Dewey too, collective discussion epitomizes the method for the fixation of beliefs that qualifies this stage.

Here again Dewey makes the logical implications of this transition clear by saying that:

> It is hardly too much to say that it was the emphasis put by the Greek mind upon discussion–at first as preliminary to decision, and afterwards to legislation–which generated logical theory. [1, p. 157]

With the second stage we are still in the domain of a way of thinking that continues to fail to fully take reality into account. This stage of logical thought, by opening up the play of ideas, introduces a profound instability in thinking, and threatens to unsettle individual as well as collective beliefs. As it was the case with Peirce, the journey toward logical maturity is initially characterized by an increase, rather than a decrease, in epistemic uncertainty. Out of his initial state of protective fixity, the human mind is exposed to unexpected sources of uncertainty. Set in motion by its own movement, thinking risks, therefore, to lose its function in guiding action and this, in a way, calls for the transition to a third stage.

5.3.3 Thinking as the Logic of Standardized Reasoning and Proof

The third stage of logical thought strives to provide some stability to ideas that have been unsettled by the social practice of discussion. Whereas Peirce saw in the social impulse a form of external pressure capable of overcoming the stubborn irrationality of the first method for the fixation of belief, Dewey sees in this conversational pattern a profound source of instability, against which methods of logical proof are devised. The aim is to find a method capable of bringing order in the uncontrolled play of ideas. Proof is that which enables the transition from discussion to reasoning. Yet proof in this context has a purely formalistic meaning. As Dewey explains:

> Reasoning is marshalling a series of terms and propositions until we can bind some doubtful fact firmly to an unquestioned, although remote, truth; it is the regular way in which a certain proposition is brought to bear on a precarious one, clothing the latter with something of the peremptory quality of the former. So far as we reach this result, and so far as we can exhibit each step in the nexus and be sure it has been rightly performed, we have proof. [1, 162]

This third stage is marked by axiomatic ways of reasoning, and a priori truths are required as premises for drawing valid conclusions. As Dewey contends:

> The scheduling of first truths is an organic part of any reasoning which is occupied with securing demonstration, surety of assent, or valid conviction. To deny the necessary place

> of ultimate truths in the logical system of Aristotle and his followers is to make them players in a game of social convention. [1, p. 164]

The opposition between social convention and logical truth marks the epistemological discontinuity between the second and the third stage. On the one hand, there is the educate play of conversation. On the other hand, the rigorous deduction of proof.

The attainment of this third stage, while ultimate from the standpoint of classical conceptions of logic, remains insufficient if seen from the standpoint of the pragmatist epistemology of rationality as inquiry.

As Dewey explains:

> As compared with the period of fixed ideas, doubt is awake, and inquiry is active, but in itself it is rigidly limited. On one side it is bounded by fixed ultimate truths, whose very nature is that they cannot be doubted … In the other direction all "matters of fact," all "empirical truths" belong to a particular sphere or kind of existence, and one intrinsically open to suspicion. The region is condemned in a wholesale way. [1, p. 166]

The awakening of doubt, while positive, is insufficient insofar as it is constrained by the rules of the axiomatic way of proceeding. In conclusion:

> This limitation upon inquiry settles the interpretation to be given thought at this stage–it is of necessity merely connective, merely mediating. It goes between the first principles–themselves, as to their validity, outside the province of thought–and the particulars of sense–also, as to their status and worth, beyond the dominion of thought. Thinking is subsumption–just placing a particular proposition under its universal. It is inclusion, finding a place for some questioned matter within a region taken as more certain. It is use of general truths to afford support to things otherwise shaky–an application that improves their standing, while leaving their content unchanged. This means that thought has only a formal value. It is of service in exhibiting and arranging grounds upon which any particular proposition may be acquitted or condemned, upon which anything already current may be assented to, or upon which belief may reasonably be withheld. [1, p. 166]

5.3.4 Experimental Reason or the Inferential Logic of Discovery

We achieve a fourth and last stage when the logical self-enclosure of thought is finally overcome. Here the metaphor of the law court is replaced, unsurprisingly, by that of the laboratory.

> In the laboratory there is no question of proving that things are just thus and so, or that we must accept or reject a given statement; there is simply an interest in finding out what sort of things we are dealing with. Any quality or change that presents itself may be an object of investigation, or may suggest a conclusion, for it is judged, not by reference to preexistent truths, but by its suggestiveness, by what it may lead to. The mind is open to inquiry in any direction. [1, p. 167]

The ultimate stage of thought is described in terms of the experimental logic of scientific inquiry, exactly as in Peirce. At this stage, "thought takes the form of inference instead of proof." To use familiar terms, inference refers to a synthetic

rather than an analytic way of reasoning. This advance and extension of knowledge through thinking seems to be well designated by the term "inference." It does not certify what is otherwise doubtful, but "goes from the known to the unknown." It aims at pushing out the frontiers of knowledge, not at marking those already attained with sign-posts. Its technique is not a scheme for assigning status to beliefs already possessed, but is a method for making friends with facts and ideas hitherto alien. Inference reaches out, fills in gaps [1, p. 168].

Emphasizing the pragmatic and creative dimension of inquiry, Dewey summarizes the logical meaning of this fourth stage with the formula "*Inventio* is more important than *iudicium*, discovery than proof." [1, p. 168]

The decisive contribution of the fourth stage consists in opening up for the first time the entire domain of empirical facts for thinking. The exploration of singularity acquires an epistemological meaning before unconceivable.

In experimental science, "The interest is in the discrepant because that stimulates inquiry, not in the fixed universal which would terminate it once for all." [1, p. 168]

Provocatively, Dewey contends that:

> The microscope, telescope, and spectroscope, the scalpel and microtome, the kymograph and the camera are not mere material appendages to thinking; they are as integral parts of investigative thought as were Barbara, Celarent, etc., of the logic of reasoning. [1, p. 169]

At this stage, as Dewey will remind elsewhere, an alteration of the quality of thought occurs, one that, moreover, affects the anthropological basis of thinking. What happens is that doubt ceases to be feared and escaped, that the search for knowledge does not proceed through the systematic closure of a conceptual image. A process of necessary education has taught human beings the pleasure of doubting. This is a profound transformation in the experience of human beings, at the anthropological as well as psychological level. The human mind oversteps the threshold of infancy not when it abandons magic or mythical ways of thinking, but once it learns to love doubt, to enjoy doubting instead of fearing it.

For Dewey, more explicitly than for Peirce, doubting is an intrinsic and decisive feature of reasoning. Doubt is something that needs to be entertained rather than dispelled. As he says, doubt needs to be chased back, we have to play with it, we need to learn how to entertain it in our mind. These and similar expressions show the kind of attitude human inquirers learn to adopt when they pass through the stages of logical thought. As a consequence, the different stages of thought are not defined according to their intrinsic rigor, or to their capacity to attain valid or true conclusions, but rather according to the way in which they succeed in making the practice of doubting creative.

5.4 Conclusion: The Pleasure of Doubting

It is from this vantage point that modern experimental science is seen by Dewey as making possible the emergence not only of a new epistemic configuration but, more profoundly, of a new *anthropological* era, one in which human beings, for the first

time in history, begin to take pleasure in doubting. This pleasure of doubt marks the definitive exit from the infancy of logic, and the attainment of what we could call a sort of practical or pragmatic maturity.

As he explains:

> Modern scientific procedure, as just set forth, seems to define the ideal or limit of this process. It is inquiry emancipated, universalized, whose sole aim and criterion is discovery, and hence it marks the terminus of our description. [1, p. 172]

Nearly thirty years after his seminal paper on the stages of logical thought, Dewey will reformulate in *The Quest of Certainty* his ideas through a dual scheme, where he will distinguish between two different approaches to the doubt-inquiry process. On the one hand, there is the attitude of those who, facing uncertainty, search inwards for a symbolic reconciliation with the world. This attitude is common to primitive people and to most of the western pre-modern intellectual achievements. As he notes, "exaltation of pure intellect and its activity above practical affairs is fundamentally connected with the quest for a certainty which shall be absolute and unshakeable." [8, p. 5]

In a profoundly innovative way, Dewey saw classical philosophy to differ only a little from primitive thinking, religion, and magic. Indeed, each in its own way these intellectual undertakings pursue the same quest for certainty. Their common denominator is the fear of doubt, and the idea that intellectual reflection can deliver definitive and immutable action-guiding beliefs.

On the other hand, there is the attitude of those who face uncertainty "by changing the world through action." This is the experimental attitude set forth by modern science. This stage is qualified by the fact that "man … has learned to play with sources of danger. He even seeks them out, weary of the routine of a too sheltered life." Yet to seek dangers out, to live in a situation of epistemic uncertainty, requires a new maturity which, for Dewey, is inseparable from the capacity to take pleasure in doubting.

"Enjoying the doubtful" [8, p. 182] becomes, therefore, the distinguishing trait of the last stage in the evolution of human rationality. The mature man, as opposed to humanity in its infancy, is not who knows better, nor the one whose representation of the world is more accurate. Neither is he the one who has definitively shaken off himself false beliefs. He is of course all this. But, more than that, the mature man is one who takes pleasure in doubting, who can entertain and endure this state of uneasy uncertainty that humanity in its long career has always feared and tried to escape. Enjoy the doubtful, rather than search for truth, is the formula which captures the pragmatist understanding of rationality as a never-ending process of epistemic revision dominated by the idea that beliefs are temporary and fallible guides in an ever-changing world.

Acknowledgment This paper is based on a talk given at the international conference "Homo logicus II: the Infancy of Logic/Native Logics," Paris, EHESS, 15th June 2017. I thank the conveners and all the participants for the feedback received, and Julie Brumberg-Chaumont for her remarks on the final version of the paper.

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