

# NOTE TO USERS

PREVIEW

This reproduction is the best copy available.

**UMI**<sup>®</sup>

PREVIEW

THE CONCEPT OF DURATION AS KEY TO THE LOGICAL FORMS OF REASON  
AND  
AND  
THEIR PSYCHOLOGICAL PROCESSES

A THESIS SUBMITTED TO THE FACULTY OF THE  
GRADUATE COLLEGE OF THE UNIVERSITY OF NEBRASKA  
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

BY  
CHRISTIAN O. WEBER

LINCOLN, 1924

UMI Number: DP14162

### INFORMATION TO USERS

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleed-through, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

**UMI**<sup>®</sup>

---

UMI Microform DP14162

Copyright 2006 by ProQuest Information and Learning Company.

All rights reserved. This microform edition is protected against unauthorized copying under Title 17, United States Code.

ProQuest Information and Learning Company  
300 North Zeeb Road  
P.O. Box 1346  
Ann Arbor, MI 48106-1346

## CONTENTS

Chapter	Page
I. Definition of Time by Abstraction and Experimentation.	1
1. Knowledge and time. . . . .	1
2. Experimental psychology and the problem of knowledge . . . . .	7
3. Experimental psychology and the 'self' . . . . .	14
II. Measured and Measuring Time . . . . .	22
1. Mathematical time versus duration. . . . .	22
2. The properties of mathematical time and the properties of duration. . . . .	25
3. Experimentation and the concept of time. . . . .	36
4. The phenomena of rhythm . . . . .	45
5. Time and its predicates . . . . .	56
6. The good man as measure . . . . .	66
III. Types of Logic in Relation to the Concept of Time. . . . .	70
1. Forms of understanding. . . . .	70
2. The distinction between formal and moral reason . . . . .	72
3. Fallacies in relation to the distinction between formal and moral logic. . . . .	113
4. Experience as the unifier of formal and moral reasoning. . . . .	127
IV. Time as the Unifier of the Formal and Moral Elements of Reason . . . . .	130
1. Immediate Experience and Reflection . . . . .	130

267225

13-50-31 Hertz. 2.05

16 0 31 - 20 10 10

Chapter	Page
2. Creative imagination. . . . .	133
3. Fact and value and imaginative thought. . .	145
4. Embodiment of time in the imaginative life .	189
Bibliography.. . . .	200

PREVIEW

## Chapter I

### Definition of Time by Abstraction and Experimentation

#### I

#### Knowledge and Time

##### 1

1. Plato observed that time is unworthy of the solicitude of immortal beings; in the realm of perfection the transitory is a matter of indifference. This idea has interesting parallels in the Christian image of a paradise of changeless bliss, and again in the Buddhist conception of heaven as emblematic first of all of timeless peace. And philosophy, exact science, and psychology, in spite of many ostensible differences, in curious accord permit time to pass the portals and enter the sanctities of knowledge only on condition of being stripped of all sweat and toil, the hope and pain with which hard duration is garbed in the sorry realm of mortals. To become knowable in the terms of these disciplines, time must cease to be living duration and must take on the rigid forms of concepts. Thus, to the physicist it is a dimension, and to the psychologist a form of perception, while to the philosopher, time is a category. For all three it has strangely enough become knowledge at the cost of alienation from experience.

- 
1. Herbert Nichol, The Psychology of Time, N.Y., 1891, p.1.

We have here the central futility and paradox of human knowing. The formal idea of time can represent the reality of our experience of it only by a certain untruth, in the sense that our experience of things must involve both real time and the unforeseen which makes it real, whereas our ideas of reality are regarded by us as timeless. Into ideas, it seems, duration cannot bite: they have no yesterdays and no tomorrows. Truth is discovered by us, and is not the product of a maturation in time. At any rate, this is the most widespread account of the nature of knowledge as held today, whether by philosophers, exact scientists, or psychologists. And the futility of it <sup>knowledge as timeless</sup> all appears in the resultant that knowledge pertains only to the forms of experience, and misses, what gives it a grip upon life, namely, the labor and jeopardy of realized time. All that alleviates the situation is the circumstance that the timeless knowledge we profess is useful in certain practical fields even if it is faithless to the reality. In short, whether or not our knowledge is true, it is at least pragmatically valid. But when we turn from action to reflection and declare our interest in knowledge as such, and in its validity apart from its usefulness, we are confronted with full force by enigma.

2. Though the various solutions are many, they extend only in two directions. First, we may assume that the discrepancy exists between our ideas and reality; second, between reality



and our ideas concerning our ideas. In other words, either our common sense fails to lock-step with reality, or else it is our epistemology which is at fault. The only assured way to a solution is to move in both directions. If we would trace the complex pattern woven of human nature and things, we must depend on the mutual articulations of human inference and brute fact, of experience and reflection. In truth, fact and reflection are inseparable; and because of their inevitable mingling we are metaphysicians in spite of ourselves. Indeed, we meet with our first reverses when we vainly fancy ourselves to be rid of all prepossession and as dealing with an unhaunted universe of things.

3. The easiest escape is to accept the insoluble paradox the fact that ideas at once misrepresent reality and yet enable us to cope with it successfully; this is both scepticism and surrender. An alternative is stoutly to affirm that usefulness is the only verity of knowledge; to expect of knowledge an agreement with reality other than this heuristic service to our purposes is vain. Such is the answer of the pragmatizers in philosophy and of the instrumentalists in science who regard all scientific principles as conventions, and text-books of science as mnemonic devices to keep us in touch with the magic formulae which enable us to subject nature to our wills. A third view is that of absolute idealism, which, in spite of its sense of being at odds with pragmatism, still indulges the same method of

Views  
of the  
knowledge-  
time rel-  
ation

proof by sneer affirmation. For, the pragmatist attains a unified epistemology by denying of knowledge that which puts it at odds with reality, namely its truth claim. The idealist, on the other hand, attains a reconciliation by denying to reality that which puts it at odds with knowledge, namely its maturation in time.

But if scepticism errs by too little courage, exclaiming in the words of Du Bois Reymond, "ignoramus ignorebimus"; then surely pragmatism and idealism err by a too vaunting bravery. To mutilate reality is not to explain it; nor can reality <sup>Reality</sup> ~~is not simple~~ be reconciled to knowledge by neglecting their differences. These thinkers cut the Gordian knot instead of untangling it; and their reward for a too easy victory is paltry. The reality which the idealist robs of time is a tenuous ghost of a reality that may well befit the pragmatist's knowledge which 'works' but which cannot say why or how, that may own no verity save its slavery to our purposes, and can be equally true if it but works whether those purposes be good or bad. What gain is it to be reconciled to the pragmatist's reality at the cost of being estranged from the intelligibility of our reasoning itself? The Universe of bare bones which pragmatic science lays on the altar of utility is an alien thing, it awakens in us no warmth of recognition; and the problem it gives us to account for is

---

the fact that we expected a universe clothed in living flesh though our wholly pragmatic intellect is only able to comprehend skeletons. What gain is it to come to terms with the truth of idealism when each moment of our experience is brim full of a creative impetus and freedom which noetic reason begins by denying? In truth, a metaphysic of timeless things logically implies an epistemology of timeless thought; and accordingly, the atomic and timeless world of pragmatism implies the absolute knowledge of idealism. The difference between these schools lies in a difference of emphasis, probably temperamental in origin.

The true alternative to them is Bergsonism. In this philosophy a theory of knowledge is attempted by emphasizing the timeful and impulsive nature of both reality and thought. But Bergson too suffers a non sequitur in his inference, "vital impulse, therefore freedom". On the contrary, mere vital impulse is not free: in order to be free it requires guidance, therefore intellect. And in the end, Bergson fares as badly by denying form to experience, as pragmatism and idealism do by denying its impulsiveness.

4. There is a suggestive sense in which scepticism, pragmatism, and idealism share the same error, if we may so call it. Scepticism, by denying the chance of surmounting the incomprehensible, pragmatism and idealism with their denial of the incomprehensible itself, agree at bottom in a denial of faith

Scepticism  
as moral  
error

in the possibility of progress of knowledge.

It is thus that latter day speculation has arrived by a <sup>Reality transcends knowledge</sup> subtle process of degradation to deny what must be the very life of thinking, namely the faith of the thinker. Truth should be held too dear for the cheap coin of premature answers. We must not despoil the objects of knowledge, fitting them to our ready-made concepts, but rather to ~~invent~~ <sup>invent</sup> concepts in sufficient number and character to envisage reality as it is. It is this very spirit of tireless quest that points the way to a <sup>fourth</sup> solution. If our knowledge and reality quarrel because the <sup>Reality as growth</sup> static concepts of thought are burst by the ever-swelling measures of experience, then obviously, the way to harmony is a knowledge which grows at equal pace with the reality to which it points. Now, this is no more than the teaching of Plato, and if it is accurate, modern thinkers are under the necessity of re-considering this classic philosopher, unless it were more <sup>The need of growing knowledge</sup> accurate to say, to acquire the spirit of his philosophy.

The history of our thinking has verified a certain dark prophecy of Anaximander to the effect that all things must return to their origin to atone for "their offense against the order of time".<sup>2</sup> If we shall find that our thinking, like our actions ~~are~~ subject to the ubiquitous fortuity of time, we defeat scepticism by attaining a knowledge which does not 'copy' reality but which 'imitates' it in Plato's sense, which catches its shifting sinuosity. It is not the unsophisticated idea of

<sup>2</sup>. Zeller, Pre-Socratic Philosophy, Vol. 1, p. 256.

common-sense or of logic that disagrees with reality; the disagreement lies rather between reality and our ideas concerning ourselves. It is not thinking, but thinking about thinking which has created the paradox of timeless ideas which 'copy' a timeful reality, thought about thought is epistemology and this thought about thought is the generating condition of the paradox of the timeless ideas; its moving cause, however, is our confusion of epistemology and logic. If metaphysics has a share in raising the problem it must have a share in settling it; which means again that we must rise to the metaphysical point of view. It is but a tour de force to trim reality or knowledge until these fit into one another. The reason is, that thoughts and things have a way of filling our experience to the brim, and if we deny those thoughts and things that seem incomprehensible there is created at once a sense of dearth for which there is no remedy except restoration. Reality will not be denied, and its persistence is the core of experience itself, whether this reality be defined or undefined; if there is any trimming to do, our speculation is itself the proper object for such surgery.

11

Experimental Psychology and the Problem of Knowledge.

5. Because of the profound influence of Wilhelm Wundt and his followers, the dominant tendency of modern psychology is its reliance upon experimentation. The type of positive psychology

Reality  
will not  
be denied

3  
which Ribot predicted<sup>3</sup> and longed for is now upon us. But is it quite as free from metaphysics as Ribot desired? Is the use of instruments able to deliver us from the vice of thought if vice it be? To be sure, we must not allow presuppositions, metaphysical or otherwise, to warp our thinking; but in order to escape prepossessions it is necessary to do more than heartily despise them. Certainly, there is one a priori assumption to which<sup>4</sup> of experimental Psychology exclusive addiction to the use of instruments in investigation does not free the psychologist; namely, the assumption that human nature is not determined by the measures of quantity which it is the function of the instrument of the laboratory to give. But, in truth, to escape all prepossession is neither possible nor desirable. Ostwald well observed<sup>4</sup> that natural science<sup>5</sup> cannot be avoided is of necessity interwoven with natural philosophy, and that it will be "good or bad according to the clear-headedness of the teacher". What caution we actually need is but knowledge of what our prepossessions are. In several passages, Ribot himself<sup>5</sup> exemplifies this need, champion of 'positivism' though he be. "The new psychology", he says, "differs from the old in its spirit: it is not metaphysical in its end -----". Yet,

3. Th. Ribot, German Psychology of Today, Tr., J.M. Baldwin, 1886, pp. 5-6.

4. William Ostwald, Natural Philosophy, p.10.

5. Op. Cit., p. 6.

on the same page he tells us that the "new psychology" borrows as much as possible from the biological sciences. He further identifies "psychology without metaphysics" with "psychology without a soul". Mach too, in his Analysis of Sensations <sup>6 Mach's Psychology</sup> attempts what he calls an "anti-metaphysical" chapter, which in truth is but the metaphysics of common-sense. The a priori method of getting truth does not necessarily exclude experimentalism.

6. The probable motive of the philosopher who assumes that there is an a priori knowledge, independent of experience, <sup>Knowledge and the need of Prediction</sup> is the desire to get knowledge without the risk entailed by actual experience. That is, he desires to know the future before his literal living of it. But is not this motive also that of the scientist whose great aim is to achieve a method of perfect prediction? Since his method is quantitative, he proceeds to achieve this by assuming in advance a conserved universe. Prediction is impossible unless the sources of the

- 
6. Ernst Mach, Analysis of Sensations, 1914, ch.1.
  7. Objecting to introspective data in psychology, Edward C. Tolman ("A New Formula for Behaviorism", Psychol. Rev., Jan., 1922) asks, "How can one build up a science upon elements which by very definition are said to be private and non-communicable?" But the so-called observations of the 'external world' are no exception to this difficulty. The determination of the position of a star depends on the agreement of many observers. Every observation must become 'subjective' to become an observation at all.



unforeseen are somehow excluded in advance. Thus the law of conservation, given plausibility by the researches of Helmholtz and Joule, has become the cornerstone principle of all science. The changes of the universe in this view turn out to be out combinations and recombinations of the given. Any science <sup>mathematics</sup> <sup>the ideal</sup> <sup>science</sup> approaches mathematics to the degree that it attains this ideal of perfect prediction. In mathematics, forecasting becomes so perfect that time is wholly eliminated. The equation of the mathematician is timeless: it is eternal in its truth. But it is to be observed that just as formulae become timeless, they become 'non-experiential'. Mathematics is the accredited non-experiential science.

The a priori philosopher arrives at a similar result, with the difference that he employs different concepts. He is <sup>Logic, as</sup> <sup>the ideal of</sup> <sup>Philosophy</sup> especially concerned with the desire to rob experience of its evil hazards. Hence, in place of the quantitative uniformity of nature, he posits nature's absolute goodness. But the pre-suppositions of his logic is also a law of conservation, not of the quantity of matter in the universe, but of its unchanging virtue. Whether we posit the eternal preservation of the matter of the universe, or the eternal preservation of its values, we deny the reality of time in the sense of a maturation or growth. Yet, these assumptions are necessary for formal reasoning, be it in the sphere of matter or in the sphere of



7a morals. We are again face to face with the essentially baffling quality of our reasoning. Sound reason would portray reality as it is, whether simple or complex. Yet, the reasoning which gives form to many schools of intellectualist philosophy seems to assume in advance that reality is either perfect uniformity or perfect goodness, or both; it refuses to take chances with the evidence of experience.

7. There are two ways in which we may interpret this matter. First, the operation of thinking may be such as to require the positing of a conserved universe as the preliminary to successful reasoning. This is a possibility which deserves careful examination. Or, again, we resort to another solution in which we tend to take the assumption of uniformity, which may be but the bare beginning of thought, as the end of thought; that is, as reality. Otherwise stated, we begin with a conventional denial of the radical ~~denial~~ of experience; but conclude by supposing that this denial is ontologically true. As between the <sup>The denial of time as a convention of thought</sup> 'exact' scientist and the absolutist philosopher, there is a marked similarity of method. Bertrand Russell<sup>8</sup> well observed, that logic is but the youth of mathematics just as mathematics is the manhood of logic. We are inclined to think that science has lost its naïveté when it philosophizes. But, in truth, the more naïve it is, the more daring is its metaphysics. Science has developed a mathematical method of incalculable value

8. Bertrand Russell, Introduction to Mathematical Philosophy, 1910, p. 194.

but it tends to go too far in assuming that since counting is possible in the universe, it is a universe of numbers only.

It may be legitimate to assume, as a bare beginning of reflection that the universe is a universe of numbers; but this may <sup>The doctrine of uniformity as a measure</sup> prove but a device for transferring the incalculable elements of experience to the realm of thought. If we approach the turmoil of experience ready to stake our lives on the quixotic faith that nature is wholly reasonable and wholly good, pain and disaster will quickly give us a healthy sophistication. Yet, it is possible to be Quixotic in our reasoning, for here we apply as a yardstick the assumption of the complete uniformity or the complete goodness of nature, with the purpose of determining how completely nature measures up to them. What we accomplish is a transfer of some of the hazards of experience to the sphere of thought. It is not that thinking entirely <sup>The function of thought</sup> escapes trial and error, but that it escapes the perils which attend action. A problem solved wrongly in action means pain and death. That same problem solved wrongly in thought means only a loss of time. But life is more than a debate, and the knowledge gained in thought must sometime determine conduct for good or for evil. Between thought's occasion and its sequel is played the whole drama of life, victories and defeats. The law of conservation and the assumption of the universality of the good may be necessary preliminaries to thinking, but we must

mistake this first stir of thought for its last. Now, this is precisely what we do when we accept the a priori principles of thought as also the principles of being. The uniformity of <sup>Thought</sup> as <sup>timeful</sup> process nature may be but a question we ask of her; and a real question does not contain its own answer. This is to say that thinking has its own radical evolution and history; and that thought which posits the timeless, is itself a timeful process, with that history and those vicissitudes which time always brings.

The present revolution against Newtonian physics marks renewed concern ~~with the~~ problem of time. Even objects are being regarded as "chunks of events". Indeed, the problem of time has ever left us, whether philosophers or experimentalists, in the quandary of Saint Augustine, who in his extremity regarding its enigma, besought heaven for enlightenment. <sup>9</sup> Out at once-ment for our offense against "the order of time" is now an <sup>Time in</sup> <sup>Physics</sup> accomplished fact; for relativism marks a certain surrender of objective science to conceptualism. Physics is discovering that such concepts as gravity, mass, and density, are far from being rigidly unchanging in their connotation. On the contrary, they are astir with protean meaning and like life itself, have a history of development in which the reality of time is undoubted. Time will not be denied, even in exact science. Then, how much more must this be the case when we are dealing with mental phenomena, such as the process of knowing.

9.. Hiram M. Stanley, Psychol. Rev., Vol. VII, 1900, No. 3, pp. 284 - 288.

III  
Experimental Psychology and the 'Self'

8. Suppose, then, that in the 'positivist' spirit of Ribot we were to confine ourselves to a treatise on the psychology of thinking devoted to 'facts' as these thinkers define them. At once we are under a difficulty, for whether our 'facts' will pass muster will depend on whether they are the 'facts' of behaviorism, or of structuralism, or of functionalism, <sup>Facts' in psychology</sup> or of the new <sup>10</sup> gestalt theorie. Not even the concept of a thinking subject will be granted by everyone as certainly a fact, and one with which we may begin our treatment. One has but to exchange the point of view of Watson for that of McDougall to see the so-called facts of behaviorism vanish far favor of facts of a very different kind. The inability of one school of psychologists to give recognition to the facts of another school can often be traced to their highly special methods of attaining their respective types of fact. If we are to <sup>concept of the 'self'</sup> discuss the psychology of reasoning, common sense would seem first of all to require a subject to do the thinking. Let us consider how methodology has led to the discovery of the 'self' in some psychological laboratories, and to the rejection of the 'self' in others.

- 
10. Koffka, K. "An Introduction to Gestalt-Theorie", Psychol. Bulletin, Vol. XIX, 1920, No. 10.

In the stinging experience which we daily live we do not doubt that there is a 'self' which wages a ceaseless fight, and which pays a price of pain for each failure. Why does the school of <sup>Watson</sup> and <sup>Titchener</sup> Watson or the school of Titchener reject such an account? Surely not because such a 'self' escapes their experience, but because it escapes their instruments. They proceed somewhat like Laplace who declared that God did not exist, since the telescope does not reveal His presence in the heavens. To be sure, there remains the introspective testimony concerning the reality of the self. But this does not always suffice, for today the psychologists insist that if there is to be a properly organized science of <sup>Trained</sup> <sup>observers</sup> <sup>in Psychology</sup> psychology it must be duly equipped with what are known as 'trained observers'; and the training of such observers consists in learning how to report all inner experience in some approved manner and with a cut-and-dried terminology, from which is excluded in advance all terms that do not tally with the 'system' which the particular psychologist champions. If the subject persists in saying 'effort' instead of kinaesthesia, 'impulse' instead of 'tendency', he is regarded as under a popular illusion, and must be further 'trained'!

Commenting on the difficulty that psychology has had in investigating the self, Miss Calkins <sup>11</sup> asks significantly, "Is there

11. Mary W. Calkins, Am. J. of Psychol., Vol. XXVI, Vol. 4, pp. 495-524.

no fox at all or does he avoid the traps we have set for him?".

In defense of the concept of the self one summarizes the recognition experiments of Ketzoroff, the investigations of Michotte and Pramon voluntary choice, and Acl's study of volition. In these studies the subjects actually refer to an 'I' and to a 'self'.

But does their testimony have validity because they uttered it in a laboratory instead of on the street; and is the testimony of the other fifteen hundred millions of people on earth that

daily testify to an 'I' to be discounted? Luckily for the <sup>Reality does not depend on definition</sup> 'self', Acl's laboratory cases had not been 'trained' enough to bow

to a widespread fallacy. This fallacy consists in the belief that unless a type of experience can be defined, it is not real.

Bluntly put, we set out to discover the self or the subject of experience, as an object of knowledge. And yet we try to enforce the unreasonable provision that if the self is an object, it cannot be a subject.

That is, first we refuse to accept as self anything but a concept, but then we reject the concept as not a self. In <sup>The self and analysis</sup>

the Cornell laboratory <sup>12</sup> the introspective observer is carefully instructed as follows: "The categories of description are the last terms of analysis, the elementary processes and their attributes".

The structural school of psychology has devised a method intended to rid the experimenter of prepossession. But actually, has not

---

<sup>12</sup> E. B. Titchener, "The Science of Introspection", Am. J. of Psychol., Vol. XLIII, p. 494.

prepossession dictated their method? For, the "elementary processes and their attributes" of Titchener are at the very height of abstraction. These elementary processes turn out to be sensations and their attributes; but since the criticism of Rahn<sup>13</sup> and others, even Titchener<sup>14</sup> has distinguished between the 'sensetion of observation', which is verified by immediate experience only, and the 'sensation of classification' which is a laboratory product, derived by a process of bracketing together the attributes that occur together in experience. It was by a similar Titchener on sensation process of seeking to derive the reality of the external world from a union of elementary sensations and ideas that Berkeley and Hume arrived at scepticism. We cannot escape metaphysics in psychology by talking as though Berkeley and Hume never existed; for this may lead to the acceptance of their philosophy and the scepticism which it involves. The attempt to reconstitute the living individual out of elementary units, whether of sensations, attributes, or reflexes, has resulted in a scepticism concerning the self. Similarly, mechanism in biology has been the result of speculating in such terms as the 'gemmules' of Darwin, the 'pangenes' of De Vries, the 'physiological units' of Spencer, or the

- 
13. C. Rahn, "The Relation of Sensation to other Categories of Contemporary Psychology", Psychol. Rev. Mono. Suppl., Vol. XVI, 1913, No. 67.  
14. E.B. Titchener, "Sensation and System", Am. J. of Psychol., Vol. XXVI, 1915, No 2, pp. 258-267.



'unit characters' of Mendel. It seems that in all these cases we are dealing as much with hypotheses as with facts. Experimental research on the self in psychology especially seems to be a mixed case of observing and philosophizing. James R. Angell<sup>15</sup> declares that this double function has been damaging or beneficent relation depending on whether the psychologist knew or did not know that he was philosophizing, and on whether he failed to distinguish his literal use of the concept of structure from the metaphorical use of it.

9. Another group of psychologists, sincerely desiring to deal with facts and with facts only, discourage any discussion of the psychology of reasoning in terms of a reasoning subject. <sup>metaphysics of Behaviorism</sup> Of all the current schools of psychology, behaviorism is perhaps the least aware of harboring a complete metaphysic which it has turned behavioristic to escape. The behaviorist would know the truth concerning the nature of life, but sets out with the denial of those concepts which perhaps will be needed to describe it correctly. Such concepts as 'ends', 'vital impulse', and 'choice' are taboo with most behaviorists. The avowed intent of the behaviorist is to describe man in the fewest terms possible. But do we not have here already a highly philosophical theory?

---

15. James R. Angell, The Relation of Psychology to Philosophy, University of Chicago Studies, 1903, p.4.