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II.—SOCIAL IMPLICATIONS OF LOGICAL THINKING.

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1. THE PROBLEM AND ITS DIVISION.

WERE it not for the affection with which we cherish our own views, it would be easier for all of us to agree more readily about the historical character, the social origin and meaning of our ideas. In this paper I want to point out some aspects of the connexion between the structure of logical thinking and social life. I want to show that without this connexion with social life the principles and categories of logical thinking could neither exist nor have any sense.

We to-day think of man more and more as essentially working in society. All his faculties and actions are derived from his work in society. This would be a truism were it not for traditional idealistic philosophy which regards logical thinking, its laws and properties, as being rooted in and originating from *reason*. The traditional theory is based on the view that man is primarily a thinking and reasonable being and that from the very outset, owing to his very nature, he could not help being a logical thinker. As La Bruyère expresses this well-known theory: "Reason is universal, and its reign acknowledged wherever there are human beings." We are able to think logically because we are reasonable beings. The first principles of logic are self evident and need no further proof as being rooted in reason itself. There is no incentive in this theory to go beyond "reason" for the explanation of logic and this may account to a certain extent for the recent origin of the sociological approach to logic which has reached a certain maturity only in the course of the last 30 years. However, after the latter has been once constituted on the basis of the *homo faber*

theory of human nature, the adherents of the traditional view may also be interested to see the connexion between these two fundamental activities of man, the rational and the social.

The attempt at a sociological treatment of logical thinking will meet with the objection that it is not "philosophy," but "psychology" and "sociology." Those who raise an objection of this kind have divided the world into watertight compartments and have lost sight of the unity of truth. They appear to infer the objective validity of these compartments from the usefulness of departments for our Universities. It is possible and useful to regard logical thinking abstractly and by itself. It is the legitimate method of scientific approach to isolate and to abstract. But this isolation and abstraction cannot be the last word of science, and philosophy can never legitimately refuse in the name of philosophical dignity to reset its abstractions and isolations into the concrete context in which they exist. It can never refuse to view logical thinking concretely, in all its implications.

For the purpose of this paper we must distinguish between ordinary logical thinking, the science of logic and theoretical thinking.

Ordinary logical thinking manifests itself partly as a form of verbal behaviour (forming sentences and drawing conclusions) and partly in rational and consistent active behaviour to the world. I leave aside the almost insoluble question as to the extent to which processes of logical thinking actually exist. I only try to show that, wherever logical thinking may exist, by its very nature and definition it is closely connected with social life and conditions. I shall show this in its connexion with language, in its presupposition of a "common world," in its desire for "control of thought" and in its two fundamental principles, the principles of contradiction and identity.

Logical thinking yields in some sense the "raw material" for the science of logic. I shall try to show that the science of logic arose in special historical conditions and maintains itself only while and where the same social conditions persist.

Finally, out of the interactions of logical thinking with the new science of logic and its new demands on thought may arise a new type of logical thinking which we will call "theoretical thinking." Theoretical thinking seeks for truth, claims universal validity for its results and believes in deciding questions by arguments. The sociological basis of theoretical thinking will be the subject of the last part of this paper.

2. LOGICAL THINKING.

Language as such.

If we examine the connexion of logical thinking with society, we find, of course, that its connexion with the social fact of language and speech is the most obvious of all.

Logical thinking is not possible without the help of language. There can indeed be intelligent behaviour without the accompaniment of language. There exists, to be sure, in many animals an organic intelligence which dispenses with it. No human thinking can, however, be logically mature without some language, without symbols which express ideas and represent things. We cannot think distinctly without the help of words or other spoken or written symbols. It may quite well be that from the standpoint of ultimate truth our mind is corrupted by symbols and that our intellect is darkened by words. It may be that personal intuition or mystical knowledge carry us further in the perception of truth. But from the standpoint of logical thinking the depth of the merely individual is the depth of the dream and the charm of the nameless is beyond its reach.

Words serve to fix and define the attention and intention. They serve to hold a problem distinctly in the mind and to make possible the conscious differentiation and relation between objects. The capacity to experiment intellectually with situations not immediately perceived achieves a high development and extension only through symbols. Of all signs, the auditory and written signs yield alone the variety of expression and denotation we need.

What is thought logically can be fully and unambiguously communicated from intellect to intellect by articulate language and written signs. That is the essential difference from states of feeling which can be transmitted—as fully and unambiguously—from man to man only, by sympathy and antipathy. This faculty must have died out to make logic desirable. Reason is, according to F. Lorimer, thought controlled by explicit statement, rather than by merely intuitive sensory, motor and visceral responses.

Speech is a social fact. It arose out of social conditions, out of the need of communicating with one another. This need was felt in common work, in the talk round the fire in the cave, in drama, song and dance. Speech involves a reference to other persons and arises out of social contact. All linguistic symbols imply a reference to society by being based on social custom. Speech is one of the institutions which are forced on the individual by social pressure and coercion (ridicule, etc.). Languages are peculiar to peculiar social groups. There are as many different languages as there are social groups. All symbols—as different from signs—are public, are socially and institutionally established as instruments of communication. There are none which are private and yet used to express logical thought. It is conceivable that logicians should have a language and symbols understood by nobody but themselves. But this is not the phenomenon we mean when we speak of logical thinking. The symbols of logistics are a case of artificial language, like the morse code. These artificial languages are based entirely on conscious convention and agreement and they are essentially confined to small social groups.

Only articulate language can denote things in a manner which is common to all individuals of a group. When we denote something by the unpersonal word and represent it in a concept we take from it everything which has a singular relation to us and its entire singularity.

The common world.

Logical thinking is concerned with the objective world. The distinction between an objective and a subjective world

is best defined as the difference between public and private worlds. The world denoted in language is a public world. Both language and logical thinking refer to a public world. The concepts and words used and the objects referred to must be common to thinker and listener or reader.

Certain data escape logical thinking and can as such never become its objects. Things which are essentially intimate and private will bear inspection only by certain subjects and not by others. If viewed by strangers, they change their nature and do not appear the same. They are the objects of an autistic thinking. Moreover, the absolutely singular, "das dieses da," the "this here," as Hegel calls it, is only given in being shown and pointed out and is accessible as such neither to thought nor to language.

The public world is experienced in society and is limited by the extent of our social relations. There is not one public world common to all. But each social group has a world, an environment of its own. Discussion and communication of thought is only possible where and in so far as social environments coincide. Different social groups do not understand each other and rarely a logos has been found to bridge the gulf between them. Each individual is the member of several social groups at a time and this determines the range of his possible contacts.

The control of thought.

Logical thinking is controlled thinking. Demonstration is essential to it. No mental activity can exist without a drive or impulse behind it. The desire for verification and justification has partly a social origin. Until they are 7 or 8 years of age, children scarcely know any difference between fact and fantasy. Play and quasi-hallucinatory imagination allow them to regard their desires, scarcely born, as already realized. This reign of the "pleasure principle" is abolished only in the degree in which children grow up and merge into the society of adults. Only gradually are the categories of reality and objectivity used.

Verification is necessary partly for the adjustment to the hard reality of the world, in order that we may survive.

In this sense it is for ourselves that we verify. But at least as important is a second factor. It is the clash of our thought with that of other people which produces in us doubt and the need for proof. Else the disappointment of experience would lead us to an overcompensation by illusions. The need of communicating and convincing is at the root of the need for verification. Proof is born from discussion and has no sense except in a social world. Verification further becomes valuable only through co-operation, which alone goes beyond the tiny futility of the merely individual existence.

The principle of contradiction.

Contradictions annihilate the effect of activity. The law of contradiction is fundamentally a law of all efficient and successful activity, being a universal law of all being. The distinction between affirmation and negation is found originally in the distinction between positive and negative reactions, between yes-responses and no-responses which is common to all living beings and visible already in the most simple forms of life, in *Amæba proteus* and in *Paramecium caudatum*. Organisms react differently to differences before they think about differences. The principle of contradiction is a fundamental principle of all activity which does not annihilate, destroy and defeat itself. In logic it is merely reformulated for a special branch of human activity, for the symbolic organization of thought.

The principle of contradiction has its origin far back in the history of organic life. In our social life its application is extended and reinforced. Its application is extended in the degree in which socially organized work is discovering new incompatible properties in things and new, incompatible attitudes to them. Its application is strengthened through social pressure. Inconsistency leads to maladjustment and, for social beings, also to maladjustment to the social environment which is instantaneously punished by society. Inconsistency is rebuffed because we prefer in our social relations persons whom we can rely upon and on

whose reactions we can count. People exhibiting habitually contradictory reactions are not "taken seriously." Only the absence of contradictions makes success possible. The desire for success is reinforced in society. Finally most people do not stand alone, but are engaged in some more or less useful work. Social pressure compels them to avoid contradictions which would nullify their own actions and destroy their usefulness.

The principle of identity.

This principle is concerned both with logical objects and with the objects of logic, both with concepts and propositions and with the "being" of which they are supposed to be valid. Identity has three aspects. It means permanence, independence and definiteness.

1. A symbol or proposition must have the same constant reference within any set of related symbolic processes. Things must have lasting aspects, either a permanent substance or a constant law.

2. In order to maintain its permanence in varying surroundings and circumstances, the logical symbols and objects must be to a certain degree independent from and superior to their context and environment. The logical symbol or proposition remains the same wherever it occurs, in different persons, is independent of the character, motives, etc., of these persons, and remains the same in any connexions with other symbols and propositions, in any language and in all logical operations. An object of logic remains the same in different environments, it is not completely altered by coming into relation with other objects and is not modified by being brought in the sphere of a rational subject.

3. Logical symbols and objects of logical thinking are unambiguous, definite, and each of them is different from all other symbols and objects.

The data of experience assume this identity only if we assume a certain attitude towards them. This attitude has

its basis in our organic constitution.* But it has developed in society. I want to draw your attention to a curious parallelism between logos and ethos, between logical things and ethical man.

Logical objects can be identical only if the logical subject has identity. Where man loses his identity with himself, the objects of his thought also lose their identity. The different shades and manifestations of this parallelism are outside the scope of this paper. I only refer to an extreme case, to the "flight of ideas." Persons who suffer from "flight of ideas" lose simultaneously the identity of their personality and that of the objects of their thinking. These persons have lost the autarchy and relative independence of their mind and the trend of their ideas is continually diverted by the immediate impressions of their environment, which have them in their power. They are incapable of any continuity in uniform activity. They are also unable to dwell on the same thing for any length of time and to recognize things in their identity. Only with an identical constitution of our personality do we get at the identity of things, perform logical activities and handle the logos properly. At the present time, logical science and thinking are frequently regarded as matters of a mere intellectual routine. We have, in general, lost sight of their ethical basis. Philosophical tradition at its best has, however, been always quite conscious of the intimate connexion between logical and ethical activity.

The virtuous man, by living up to his ethical demands and principles, assumes the triple aspect of the identity of logical things and concepts :—

1. Ethical value and behaviour are permanent. Aristotle observed that the good man always remains the same and does not change his ethos, whereas bad and stupid people

* I cannot deal here with the fascinating problems of the organic basis of logical thinking. I must refer to my book "Der Satz vom Widerspruch," 1932, where I deal with the importance of organic identity, of upright posture, of brain and hand for the development of logical thinking. Terminologically I must note that I call "identity" not only the relation of a thing to itself, but also that which remains identical.

are always unequal to themselves. We become as permanent as are the logical objects when we practise the virtues of perseverance, constancy, persistency, reliability and faithfulness. The same desire for permanance is expressed in the striving for immortality, fame and stability.

2. The independence and superiority of man is one of the fundamental assumptions of his ethical behaviour. It is reached in the undisturbed active rest of the soul, in the faculty of decision, and self-control, in the perseverance and patience in facing and overcoming difficulties. We say of a person that he has character when he vigorously resists all influences alien to him. We find this independence in the steadiness and equanimity with which he rejects influences of the environment which are pushing him this way and that way. We find it in the ideal of the upright man and of the steadfastness of the soul.

3. Man must be definite. The unambiguity of a person is of value. Virtue is unambiguous and *ᾠδισμένη λόγῳ*. Freedom is the self-determination of the independent identical part of man against external things.

It is not possible to do more than indicate the parallelism between the structure of logical objects and that of ethical man. The principle of identity is a postulate. Because I have identity or should have it, also the things I think about must have it. We demand in logic that things and in ethics that persons should be identical because identity is something socially valuable. Identical things and persons are necessary for social work and co-operation. The moral virtues in which we reach identity are social virtues which are demanded and enforced by society in the interest of the preservation of society and which can be gained only in society.

3. THE SCIENCE OF LOGIC.

The historical origin of logic.

We can easily date for Europe the historical beginning of logical science. The preliminary discussions began in the Greek colonies of Asia Minor and Sicily about 500 B.C.

Since 450 B.C. Athens began to take part in them. Logic itself emerged in the years between 390 and 340 B.C., between the writing of Plato's early dialogues and the completion by Aristotle of his logical writings and the third book of the *Metaphysics*. In India and China logic, curiously enough, developed at about the same time ; but exact dates are not available.

For tens of thousands of years magical methods had been as effective in adapting man to his environment as was logical science later on in some parts of the world. The psychological processes which lead to these results are—mainly through the unbounded arrogance of the modern civilized European—as unknown to us as are the processes which lead to adaptation by “instinct” in plants and animals. But there can be no doubt about the results themselves. Magical knowledge disclosed many facts about the world, made a high degree of technical and artistic skill possible, and led to a high degree of control of nature and society. Rain magic and primitive healing arts work with the same degree of certainty as do modern meteorology and medicine. Modern medicine frequently rediscovers in its own way healing methods discovered before through magic. The deep knowledge of plants attained by the North American Indians in cultivating maize has not been reached again by their more scientific successors. The method of cultivating cotton traditional with the fellahs remained 30 per cent. superior to the scientific system of the Americans who finally adopted it. The English system of irrigation in India has never reached the perfection of the old Indian system. Aurignacian art reached a high level of achievement with magical procedures. And, what counts most, the adaptation as a whole of these tribal communities compares favourably with our own.

But this magical knowledge is indissolubly bound up with the tribal system. With the tribal community also this knowledge of the world through primary sympathetic and intuitive understanding is disintegrated. Magic works only in the tribal community. At the present time we witness the joint disintegration of the tribal community and of

magic in those vast areas which are being colonized by capitalistic countries. The agrarian population adapts itself through magical knowledge and lacks logical science, not through want of intelligence but through absence of interest. It was only after the old instrument was broken up together with its social basis, through economical changes that logic became something desirable and that science became necessary as a new means of adaptation. In some parts of the world the tribal community was and is displaced by the introduction of a monetary economy and the establishment of larger towns which can lead a life of their own and are more than a casual meeting place for country people. In Greece logic and science developed in a time when a monetary, commercial, and urban community had gradually grown since the 7th century under the pressure of the increase of the population, and had undermined the old tribal community.

Magic and logic are irreconcilable and unintelligible in terms of one another. For magic science is either sacrilege or absurdity. For science, magic is nonsense. Magic is so foreign to logic that, in terms of logic, it is merely an agglomeration of logical mistakes, as many authors have shown with great complacency. This mutual hostility between them makes it impossible to regard magic as a form of logic or logic as a form of magic. They are radically different.

Logical thinking is a form of verbal behaviour. It is therefore the magical and tribal attitude to language and words which must be scrapped before logic becomes possible.

Avoiding ambiguity.

Logic demands that we avoid ambiguity. This is one of the main conditions of the critical adaptation of language to thought. It means in the interest of the new value of accuracy the reduction of the wide margin of vagueness and the breaking up of the meaning which the word owes to the thought of a long tradition. For ages philosophers have deplored the imperfection and the defects of the existing language. They are striving for a logically satisfactory and

accurate language which avoids ambiguities and confusions and in which each linguistic symbol has a single, clear, precise and constant function.

A standard outside language is introduced, the standard of meaning which is relatively independent. Logicians discover that words express propositions but that they are not propositions. They discover that the same set of words can have more than one meaning and that the same meaning can be expressed in more than one set of words:

These ideas appear to us as a matter of course. There was a time, however, when they seemed an enormity. When conceived in China and Greece, between 500 and 450 B.C., they constituted a revolutionary change.

In China the change was brought about by Teng Hsi and Confucius, in the time of the decay of feudalism. Teng Hsi stressed the importance of a correct terminology in legal texts and discussions. Confucius wanted to correct life by correcting the names of things. He composed about 480 B.C. a chronicle of the state Lu which treated of the events between 722 and 480 B.C. These Ch'un Ch'iu (spring and autumn annals) to-day appear quite trivial, meaningless and futile. At that time, however, they created a very great impression. Meng Tse reports: "Confucius finished the Ch'un Ch'iu and rebellious ministers and depraved sons were struck with terror." This book, quite colourless for us, was composed for the express purpose "of reforming a depraved age and leading it back to righteousness." Confucius said: "For the Ch'un Ch'iu the ages will love me; for it they will also detest me." What was the new thing in the book that created this astounding effect? It was nothing else than that Confucius for the first time attempted accuracy of linguistic expression and a distinction of homonyms. "Each fact and each idea should have a distinct proper name; if the name is confusing the fact and the idea will also be confused; right will appear as wrong, etc." (Li Chi XXIV ch. 7). The new attitude aroused strong protest. As an attack against tradition and the common people's usage it appeared to Hsuentu as "the greatest evil."

In Greece the new attitude to words had a similar reception. Men like Prodikos and Protagoras aroused considerable enthusiasm in the towns. Prodikos saw his main task in exposing the ambiguity of words (*ὀνοματα διαυρειν*). Eudemos, pupil of Aristotle, who was still near this time, reports that at the time of Parmenides nobody had as yet heard of the ambiguity of words and the method of their solution. Still the "eleatic logic,"* as practised by the Eleatic philosophers and Sophists (Megarics and Antisthenes) kept all the ambiguities with which tradition had loaded language.

It is socially impossible to shape language for the needs of logical thought where all members of a society are convinced that language is given by nature, adapted to nature and one of the forces of nature. For magical thinking speech has a greater power than everything else; it can perform the greatest things; it can kill and revive, protect against death, quench fire, smooth storms and tear chains. To know the name of a thing means to hold it in one's power. "O fever, thou shalt not escape me; I know thy name," said the witch doctors of the Atharva Veda in their conjurations. This magical speech is separated by a whole world from that of the logician, which is used for the communication of theoretical knowledge. We find coupled with the magical beliefs the conviction of the correctness of one's own language. Vendryes † reports from France: "Listen to a peasant discussing the patois of a neighbouring village; he will proudly affirm that himself and the people of his village alone speak properly and correctly and that the correct method of speech ends with the brook which bounds his own side of the valley." Primitive tribes are inclined to think that other "barbarian" tribes speak no proper language but babble like children or animals. We see the Pytha-

* For a detailed proof of the existence of a specific eleatic logic which was first discovered by the Danish philosopher Svend Ranulf, I must refer to my book "Der Satz vom Widerspruch," 1932, n. 483.

† *Language*, 1931, 242.

goreans reject the distinction of homonyms on the basis of the old φύσει theory ; since " words are by nature and not by convention, one word is always said by nature with regard to one thing "* . Words in themselves are a guide to truth. To each word corresponds an entity. " Meaning " can rule only after the word itself does not any more express the essence of things. It can develop its own laws only after the word has appeared to certain strata of society as a largely arbitrary convention, being of no account on its own.

The development of logic was preceded in Greece by long discussions on the nature of language. A stage in the dissolution of the magical (φύσει) theory is the archaic theory which we find in China with Confucius and with which Plato deals in his " Cratylus." The archaic theory assumes that names represent the truth of things but that these names are not necessarily those of traditional home language. It was the necessary condition for logic that language should be regarded as brought about by convention. Aristotle expressly rejects the φύσει theory in " Περὶ Ἑρμηνείας " .

The attitude of the logician gained its victory through social forces and not through the power of arguments. We have not refuted the magical theory but it died out socially in the town population. In Greece the magical theory was dissolved through the development of trade and travel. The development of the city economy was there closely bound up with the development of external and international trade. The more extensive knowledge of foreign countries is shaking the belief in the superior correctness also of one's own language. The mere contact with foreign groups does not lead necessarily to the annihilation of the faith in the exclusive correctness of the mother tongue. De Morgan reports the saying of the English sailor : " The French call a cabbage a shoe (choux) ; the fools. Why can't they call it a cabbage when they must know that it is one." The contact must be a continual and living one.

* Simplicius in cat. 40, 6.

In Greece rapine and piracy were originally linked up indissolubly with trade and prevented a mutual understanding. Very gradually trade itself, peaceful trade, developed with certain common rights between homelands and foreigners and a certain equality between them in the harbours, etc.

The tendency towards accuracy of language is reinforced where written laws replace customary traditions. Fixed and unambiguous laws are indispensable for any commercial calculation. They are introduced in most Greek towns in the 6th century as a result of the rebellion of the lower and commercial classes against the big feudal proprietors, and, according to the tradition, through the operation of individual and specially inspired legislators.

These are some of the reasons why scientific philosophy could develop only in the commercial towns of Asia Minor, Sicily and Central Greece. Sparta, the tribal state of rough warriors, did everything to discourage and suppress money economy, industry and trade, it isolated its citizens from foreigners, had no written laws and at the same time prohibited philosophy.

Tradition had co-ordinated word and thing in a certain way. Now this co-ordination is loosened and broken. This is possible only if a group of audacious and daring individuals detaches itself to a certain degree from tradition. Where tradition appears beyond criticism, logical science is inconceivable. *Why* did Confucius think that he might be detested for his work? Because it was he who as an ordinary individual praised and blamed historical actions, a privilege reserved to the son of heaven in whom Nature itself spoke. It was he who added personal judgments to the annalist and that gave his work its unique importance.

We cannot dwell here on the numerous signs of rising "individualism" in all fields of activity in the Greek commercial towns since the 6th century. The independence of critical individuals towards tradition reaches the degree necessary for logic only in unstable societies. Only where societies need adapt themselves to continually changing circumstances is the freedom of personal opinions tolerated

to a certain degree and later on even encouraged. Freedom of personal thought is generally proportional to the instability of a society. We see both grow together in our own civilization. In the 15th century innovations and originality in science were *eo ipso* suspect; now, on the contrary, we reproach a scientist for saying nothing new and original. Only under this social condition is the tyranny of tradition diminished in comparison with the initiative of individuals, in the interest of the preservation of society. The initiative of the individuals then represents the new interests of the group compared with tradition which represents the sum of correct answers to the former situations.

The social character of the new attitude to tradition is also visible in the reaction of the social group which it provoked. Philosophers are tried and persecuted only for the social implications of their ideas. By breaking the magical conception of words logical philosophy lent itself to prosecutions for impiety, for rebellion against the traditional attitude to the Gods and the country. In this way, Protagoras and Prodikos were prosecuted in Greece and Teng Hsi executed in China. The attempt of the first logician, of Socrates, to intellectualize Athenian social life met with the same reaction. By regarding the *νοῦς* as the essence of divinity Socrates replaced its magical power by intellectual superiority. In place of the common prayer of magical coercion he put a refined intellectual prayer. The aristocracy of blood and soil he wanted replaced by that of reason. His doctrines were detrimental to ancient custom and education by shifting the emphasis from organic custom to anarchic thought. Socrates' teaching either removes people from economical and political action; or, what is worse, the Socratic innovators show the apatriotic character of their logos by being friends of every country except their own: Alkibiades starts the Decelion war against his own country for the arch enemy, for Sparta; Critias rules Athens, as one of the Thirty Tyrants, for Sparta, betrays the holy places to the enemy and pulls down the walls of his own town; Xenophon fights in the army of Cyrus against Athens. No wonder that Athens, at the same time the

most prosperous and the most pious town, occasionally reacted violently against this undermining of traditionalism.

We need only add that logic, as it arose only in money economies, could also only maintain itself in its subsequent history in money economies and town civilizations.

Grammar.

The same free, detached and reflective attitude to language which we need for the distinctions of homonyms, is necessary for the grammatical treatment of language. The grammatical treatment of language of necessity everywhere, at least in India and Greece, preceded the logical treatment of thought. In Greece grammar was dealt with by the Sophists and by Demokritos. Plato (Soph. 261d) distinguished parts of speech in order to find out whether they "fit together" (*ξυναρμόττει*). He was thus led to the distinction between verbs and nouns, between words which are capable of being respectively predicates and subjects. It is well known that Aristotle owes much to the structure of the Greek language. Where his logic is transposed into the Syrian language, in which the verb *precedes* the subject as a rule, it never could become a living thing. The logical categories are first taken from language. The logical structure of the proposition is, at least at the beginning, not entirely independent of the grammatical structure of the sentence and is partly derived from it. Later on the logician may emancipate himself more and more from it. But logic has first to go through this stage. In China logic was stifled from the very outset by the Chinese language which has no grammar proper "but whose entire morphology is contained in the less tangible processes of combining isolated words." (Vendryes.)

The grammarian stands somehow outside the language, is superior to it, masters it and is not entirely absorbed in it. Grammar can arise only under social conditions which favour a strong degree of individualism. It is at once combined with the attempt to rectify and to standardize

language. Ὅρθως λέγειν became the slogan of the Sophists. Protagoras called his work *Περὶ ὁρότητος τῶν ὀνομάτων*. His attitude aroused the ridicule of the conservative public (Aristoph. *Clouds* 659–92).

4. THEORETICAL THINKING.

Truth as a value.

Through the interaction between logical thinking and the science of logic a new type of thinking can be formed which we will call the "theoretical thinking." Theoretical thinking is directed by a new value, by the value of theoretical truth, by the desire to attain and to convey disinterested truth. It approaches objects with a disinterested attitude. F. Lorimer observes that there are objects and facts which are so charged with intense love and fear that they are immune to critical discussion and intellectual organization. Such were, to give well-known instances, the Germans in Europe during the war, the bolsheviks and the Nazis in post-war times. There are people who think that anything to be worth while must be full of these emotional charges. The logician thinks differently. He demands that the objects of thought should be completely stripped of all emotions and from all immediate reference to practical interests. This demand is reflected in formal logic which, as Dr. Schiller remarks, leaves out in its analysis of thought such obviously irrelevant matters as meaning and its communication, understanding, context, truth, error, relevance, selection, risk, interest and purpose.

People who devote their life to the discovery of truth for truth's sake provoke the contempt and laughter of the man in the street. As Plato said, the pure theoreticians are regarded as "poor mad fools" ever since the girls laughed at Thales dropping into the well and Socrates "was for the most part despised and laughed at" (Diogenes Laertius). No individual can bear alone this weight of social disapproval. The theoreticians have become wise, they unite

and form a definite social group of their own.* This social group has the function to compensate the theoretical individual for the loss of social respect by creating an adequate group ideology.

This ideology praises the theoretician and inclines him to disregard the ordinary person. It is fond of praising the superior value of intellectual and spiritual activities and tends to produce in the members of this group a somewhat exaggerated esteem of the part which reason, theories and books play in the world.

On the other hand, the theoreticians confirm one another in the belief that they are above everyday society and do not properly belong to it. Contempt for the "mob," for those people who are engaged in everyday activities and who do not care for truth or wisdom, is a strong tendency in this group. Contemptuousness for the masses is bound up with the very existence of pure theoreticians. The theoretician claims that by a disinterested approach he can get at the truth about things, at the things as they are in themselves. In order to arrive at disinterested truth he must leave behind the aspirations and interests of the everyday person who is entangled in everyday society. He must become detached from the interests of everyday society. He must feel superior to it; else he would not regard his truth as a better truth than that which the man in the street perceives with the sharp eyes of his material interest.

Theoreticians can form a social group only under certain economic conditions. As we saw already, the old tribal community must be broken up through a money economy and cities, and intelligent research must have taken the place of instinctive knowledge. Further, a high development of the productive forces of society and a very developed

* This group does, by the way, not comprise everybody who is engaged in scientific research. Many of these research workers are not interested in the discovery of truth, but in that of a new marketable commodity. They are despised by the real theoreticians. The extensive social use to which theories have lent themselves during the last two centuries has brought new complications into the ideology of the theoretician. I must refer to my book "Der Satz vom Widerspruch," 1932, 417-454.

division of labour are obviously necessary conditions for the existence of this group.

Universal validity.

The validity of thoughts has a social origin and meaning. That statement is universally valid in a society which is universally believed in. The only ultimate proof we have for validity is by the testing of the assertion in society and the attempt to gain the confirmation of others. In modern science an experiment is regarded as conclusive only if it can be repeated and has been repeated by others.

The theoretician does not accept this interpretation of general validity. He imagines that statements are universally valid quite independently of the question whether they are recognized by anybody—except himself.

The flaw in this theory is that the theoreticians show by their behaviour that they do not believe in it. All theoreticians are, in actual fact, striving for social recognition. A truth is precarious until it is recognized by many. It is secured, fully also in the view of the theoretician, only after having become a common good. Their thinking is felt to be incomplete and they have a sense of insecurity about their conclusions as long as these are confined to themselves. The recognition of others increases their own conviction, and for them too it is of the greatest importance that other people should also think as they do. "All solitary experience is imperfectly realized, balked and frustrated in the realization of its own nature" (MacMurray).

The delusion that a supersocial validity can be reached has its social roots. These theoreticians represent social groups which are not aware of the limitations owing to their firm conviction that they represent the interests of the entire society. At the same time this attitude is another instance of the overcompensation we find in theoreticians. The "mihi cano et musis" is the expression of misjudged and angry theoretical foxes for whom the grapes of social recognition are too sour, but which they strive for all the more ardently, as experience proves.

Discussion and arguments.

In Greece, India and China logic obviously was invented for the regulation of a social activity, of discussion. The widespread interest in discussions created the social conditions under which man turned his attention to the mechanism of reasoning which otherwise does not interest him in the least. Monological thought grew out of a dialectical thinking which was controlled by an audience. Plato's logic is still the art of him "who knows to ask questions and to answer them" (Crat. 390).

In India logic never lost the traces of this origin. We find for instance enumerated as an essential part of their syllogism up to the latest times the "example" which does not strengthen the proof itself but which, according to the statements of Indian logicians, has the aim of making the statement more intelligible and impressive to the partner in discussion. The regard for others remains visibly essential to thought. But also in the West monological thought keeps this social character. It is a talking of man to himself, a self-dialogue, a self-control. A conflict of views is at the root of theoretical thought. This conflict is almost always embodied in concrete persons. We, internally, discuss with Aristotle, Kant, Mr. Smith, etc. And, as has been pointed out, since the lonely thinker wants also to convince, he finishes up again in social relations.

Theoreticians assume that arguments and proofs mean something and decide anything. This conviction is not shared by all strata of society. It is not the natural thing to have an argumentative mind. People argue only if they have no power to compel and to command. This is one of the reasons why the theories of revolutionary lower classes are so frequently superior to those of established ruling classes who do not take the trouble to argue. Powerful men are too proud to argue. Also in good society arguing is regarded as bad manners. As Nietzsche says: "Honest things like honest men do not carry their reasons on their sleeve in such a fashion. It is not good form to make a show of everything. That which needs to be proved cannot be worth much." These facts, without invalidating

the use of arguments and discussions (of which I personally approve) are an indication that argumentative thought as such must be treated sociologically. Lack of space prevents me from continuing the rather complicated study of this aspect of logical thought.

Conclusion.

A fuller treatment of the subject of this paper would have required an analysis of the contribution of society to the formation of abstract ideas and general concepts, to the awakening of self consciousness, and to the development of those mental faculties like memory which constitute logical thinking. It would further need a study of the effects of social isolation, in dreams and young children, on the structure of logical thought. But I hope that even as it is this paper will furnish ample material for discussion and argument.
