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**NEO-POLANYIAN EPISTEMOLOGY AND ETHICS –  
RECONSIDERING MICHAEL POLANYI’S PHILOSOPHY**

*Abstract*

Recently there has been a revival of interest in Polanyi’s epistemology. In the following I will sketch a brief proposal for a Neo-Polanyian ethics based on a schematized form of his tacit knowledge epistemology. I premise the sketch on the assumption that Polanyi’s theory of tacit knowing is not a full system of philosophy but is a set of interlocking analogical descriptions of functions of human ways of understanding the world and morality.

The proposed neo-Polanyian ethics has the potential to overcome the limitations of Polanyi’s specialized model for an ethical community, the scientific community. We need a model which is more heterogeneous in terms of cognitive and historical factors mirroring the society at large, and which is a democracy of voluntarily association.

**Part 1. The Epistemology of tacit knowing, its schematized structure and function with respect to ethics**

*A. Structure*

Polanyi’s epistemology of *tacit knowing* can be schematized as a continuum with two poles in which attention is directed from the features or clues of the situation or thing, to the whole,<sup>1</sup> in shorthand form ‘*from-to knowing*.’<sup>2</sup> We may be unable to specify the clues, these internal processes on which we rely, but these clues support our recognition of the whole, the situation or thing. The ‘whole’ is the meaning of the act of recognition — we attend to the whole the subject of which can be specified.

To better ground my proposal, I am introducing here Polanyi’s 1937 notion of ‘judicial attitude.’ He did not analyze this notion. ‘Judicial Attitude’<sup>3</sup> is used with

<sup>1</sup> Michael Polanyi, *The Tacit Dimension* (Garden City, New York: Doubleday & Co., 1966), 87.

<sup>2</sup> M. Polanyi, ‘The Logic of Tacit Inference,’ in M. Grene, *Knowing and Being* (Chicago: Univ. of Chicago Press, 1969), 140-141.

<sup>3</sup> Polanyi Papers (3:8), Special Collections, Regenstein Library, University of Chicago

two meanings: epistemological and ethical. Epistemologically, it is the commitment, readiness and ability to choose, to assess and to integrate disparate clues into a judgment guided by a principle. It is a regulative idea. Freedom is a precondition for exercising the judicial attitude. – In the ethical context, judicial attitude means to strive for the actualization of universalizable principles. In its more familiar form, in the public sphere, the judicial attitude is a commitment to the principles of justice. In Polanyian terms, universalizability means not established universality, but universal intent, a claim that the statement ought to be accepted by all.<sup>4</sup> Universalizability is a means to introduce new standards<sup>5</sup> with conviction, while respecting established values.

The epistemology of Polanyi's tacit knowing was to bridge the fact/value dichotomy, since severing fact from value discounts the knower's active participation in all knowing, i.e. knowing becomes a collection of disembodied ideas. Bridging the gap, he insisted, does not mean collapsing fact into value, or denying objectivity. Collapsing fact into value and denying objectivity would be to commit the opposite error, subjectivism. However, because fact and value are connected, concepts such as truth and objectivity need to be redefined.

As Figure 1 shows, tacit knowing is a continuum between two poles of knowing, the internal (personal) pole and the external (objective) pole.<sup>6</sup> The poles are connected by intentionality. The personal pole supports the external pole, and without it the external pole is adrift. However, elements which belong to the personal pole, are tested in experience at the external pole. In the natural sciences, where the personal element is smaller, the process of testing in experience of statements of fact is called verification. In ethics and the humanities and to a certain extent in the social sciences, where the personal element is larger to varying degrees, the process of testing evaluative statements in experience is called validation. This testing process assures the truth and objectivity, as far as it is possible, of such statements.

<sup>4</sup> Polanyi, *The Tacit Dimension*, 78.

<sup>5</sup> Ibid, 69.

<sup>6</sup> Polanyi, 'Faith and Reason' (1961), in F. Schwartz, *Scientific Thought and Social Reality* (N.Y.: International Universities Press, 1974), 125.

<i>From</i>	>>>	vector* (of intentionality)	>>>	<i>to</i>
Internal (personal) pole		‘Intellectual passions’		External (objective) pole
1. Subsidiary awareness		Integrated into		Focal awareness
2. Tacit assertion		Tacit inference		Content of assertion
3. Guessing		integration		Guessing right (validated)
4. Claim of truth		Responsible judgment		Truth itself
4a. Striving to reach the goal		Judicial attitude		Reaching the goal (the principle)

\* Vectors spring from the internal pole and are forms of the will.

**Figure1.**  
**Structure of two poles of knowing with respect to ethics**

Thinking of tacit knowing as *from-to knowing*, ‘from’ is the internal pole, ‘to’ is the external pole. In tacit knowing, the following pairs of poles (Figure 1) and their connecting vectors should be considered; all pairs are aspects of knowing and each pair highlights an important characteristic of tacit knowing.

(1) The first pair is to explain the structure of understanding by a brief sketch: Subsidiary awareness of clues or elements are ‘linked’ to focal awareness of the whole by the act of integration. For example, we have a background awareness of features (the elements) of a face but we are focusing on the face (the whole)– our tacit knowing integrated the features into a coherent whole. If we focus of the mouth of a speaker, for example, we lose sight of the face – it will recede into the background, into subsidiary awareness. [Or, another example: When we read a sentence, we are focusing on the meaning of it, to understand it as an instance of communication. However, if the sentence is written either in a foreign language in which we have slight proficiency, or if it is written in a jargon unfamiliar to us, we will be focusing on the words. Only after we think we understand most of the words (elements) can we try to make sense of the string of words as a sentence. If our mind has made the proper integrations by the use of grammar, we understand the meaning of the sentence. If not, then not only the elements, but the linkages also need to be clarified by focusing on them individually and in relation to the whole. Examples of this can be found in the incomprehensibility of jargon to the uninitiated and their gradual proficiency at its use in the process of learning.] The point is that the mind tacitly integrates elements into a whole, unless the elements are mostly unfamiliar.

(2) Another pair of poles highlights the structure of the ‘logic of tacit knowing.’ Tacit assertion at the internal pole and the content of what is asserted at the external pole. When I make a statement such as ‘Paul is a liar,’ the statement consists of the

assertion, rather tacit assertion, meaning ‘I believe it is true that Paul is a liar’ and the content of the statement ‘Paul is a liar.’ The tacit assertion is linked to the content of the statement by intentionality. If I check the content of the statement and in experience it does not turn out to be the case that Paul is a liar, the content is false and I cannot reassert the sentence because my intention was to make a true statement.

(3) The third pair of poles highlights understanding. When we size up a new situation at a glance, initially we are making an intelligent guess as to its meaning – e.g. ‘Jones killed the robber.’ This initial guess can be said to be at the internal pole of knowing. We make a tacit inference *from* the elements of the situation, Jones with a weapon, the dead robber, *to* the whole which is its meaning ‘Jones killed the robber.’ We must subject this guess to the test of experience, analyze the elements of the situation and make an inference to the objective situation. If Jones actually killed the robber, we may speak of ‘guessing right.’ Guessing right is at the external pole, as the guess had to pass the test of agreeing with objective reality.

(4) The fourth pair of poles highlights values embedded in tacit knowing. If I make a statement as a claim of truth, ‘Paul has done me wrong,’ I must make this statement with responsible judgment. Responsible judgment is rooted in the internal pole of knowing. Truth itself is at the external pole.

Responsible judgment springs from the tacit – it can also be thought of as having its root in the judicial attitude which, as I said above, is a commitment and ability to choose and to integrate disparate elements into a judgment guided by a principle. If the claim of truth is made without responsible judgment, without relying on the judicial attitude, the link to truth is severed, and in the public realm the principle of justice is lost. The claim to truth without a connection to the principle of universalizability is invalid. Note that claims to truth unconnected to external reality are subjective. Both in the case of relativism and of subjectivism, principles are lost. The claim to truth without responsible judgment is to be distinguished from error, which was illustrated in the example ‘Paul is a liar.’ In the case of error, the principle is not lost. Another attempt can be made at a statement and checked by experience. The intention to reach truth has not been compromised.

Note that the link between the two poles of knowing carry various names depending on the aspects of knowing they connect: inference, intentionality, responsible judgment, integration, judicial attitude. The general term for all these versions of the link or vector is ‘intellectual passion.’ The term ‘intellectual passion,’ now enriched by the term ‘judicial attitude,’ indicates the joining of cognitive and conative forces in knowing, and is the technical term for the vector between the poles.

## ***B. Functions***

To understand the process of knowing grounded in the tacit, it is best to see its active mode. Tacit knowing performs its function through the vector called ‘intellectual passions,’ which has three aspects: selective function, heuristic function and persuasive function. Polanyi distinguished these aspects for the purpose of analyzing the process of understanding and learning in the sciences. All three aspects of the function of intellectual passions in tacit knowing may be fallible, therefore, for Polanyi, tradition and the criticism of knowledgeable peers was the guide.

Selective Function	- cognitive trait: noting the regularity of events - conative trait: choosing intrinsic value (moral-aesthetic)
Heuristic Function	- cognitive trait: recognition of ethical principle - conative trait: self-modifying act of ‘living in’ the principle
Persuasive Function	- cognitive trait: demonstration of value of the principle (to convince the novice) - conative trait: attracting the will (to gain the intellectual sympathy of the novice)

**Figure 2.**  
**Functions of intellectual passion in tacit knowing with respect to ethics**

All three aspects, selective, heuristic and persuasive functions have a cognitive and a conative trait. The conative trait is the ‘mover’ of the cognitive trait. The selective, heuristic and persuasive aspects are intertwined. The selective and heuristic functions are within an individual, while the persuasive function is between individuals, especially between mentor and novice.

(a) In the *selective function* the cognitive trait means that one’s awareness picks out the regularity of events with respect to some notion to which these events are relevant. The conative trait of selective function means that the event picked out has an intrinsic (not utilitarian, not trivial) value – the value is moral and has an ‘aesthetic feel.’ The conative trait springs from the personal pole of tacit knowing.

(b) In the *heuristic function*, the cognitive trait means the ethical recognition of the goal of striving or of the relevant principle. The conative trait of heuristic function means a self-transforming act of reaching near the goal and ‘living’ it.

*Note that one’s commitment to a principle and one’s ability to recognize it is evoked by the heuristic function; one draws on the selective function as an aid. This is the strength of the tacit, the being and doing of the knowing self - these functions may be fallible and one will still have to check if one’s guess was right.*

(c) The persuasive function is a communal one and a mentoring one: the communication of the individual processes of selection and self-transformation. The persuasive function also has a cognitive and a conative trait. The person, who had transformed himself so that he lives approaching his ethical goal, attempts to attract the novice to the ethical goal by gaining his intellectual sympathy. In his role as mentor he attempts to evoke the conative trait in the novice – that is, he attempts to tap the personal pole of tacit knowing. We may think of it as tapping the novice’s will, or better yet, cultivating his judicial attitude. The cognitive aspect of persuasive function consists of demonstrating the value of the principle which is the goal of action.

The key to understanding all three aspects of the function of tacit knowing is to take the position that the precondition for the conative trait is freedom. That is, tacit knowing is based on freedom of the will, without this, ethical choices are neither choices nor moral.

## **Part 2. The ethics of tacit knowing and moral mentoring**

The structure of the two poles of knowing as applied to ethics would be the following:

striving to reach the goal (commitment)    judicial attitude in responsible judgment principle (of justice)

In “Knowing Life” Polanyi said: “We may describe [man] as forming the personal pole of commitment of which the ideals of man form the universal pole.”<sup>7</sup> Mindful of this, the sketch of ethical knowing below is based on Polanyi’s description of mentoring in the medical community. It is an application of a formalized epistemic schema of tacit knowing to ethical communities, and puts tacit knowledge ethics on a theoretical foundation. It avoids the problems of teleological ethics with utilitarian consequentialism to which Polanyi objected.

<sup>7</sup> Michael Polanyi, *Personal Knowledge: Towards a Post-Critical Philosophy* (Chicago: Univ. of Chicago Press, 1958/1962), 379.

		<u>Mentor's duty to novice</u>
Novice:	elements reintegrated (subsidiaryfocal)	renewed explanation of principle, accompanied by description of example contextualized.
^	More elements connected (focalsubsidiary)	described, pointed out, counter-examples given
^	elements (focalsubsidiary)	described, pointed out (practice)
^	principle (focal)	verbal statement repeated after mentor
^	trust (subsidiary)	the conative foundation - mentor attracts will of novice

		<u>The mentor's intelligent moral existence</u>
Mentor:	elements for teaching (focal)	principles and elements in subsidiary, now attended to, become accessible
^	principle reintegration, reorganization (subsidiary)	elements reorganized if reform is needed - or elements reintegrated when renewal of principles occurs
^	elements (focal)	were in the subsidiary, now attended to to examine them
^	principles (in subsidiary)	learned from his mentor

**Figure 3.**  
**Emergence of the moral being (read as bottom up levels)**

In fostering the growth of the novice, the mentor engages in the development of a moral being who is not a duplicate of his own moral self, but who is trained to make use of a scaffolding similar to his own. The mentor relies on accumulated

experience and learning, and draws on principles in his subsidiary awareness. When he is confronted with a situation, he ‘takes it in’ in a glance, then analyses it into its elements. He reassesses the situation which may require a reorganization and reintegration of elements into a new whole. This new whole is seen as falling under a principle (more or less). The principle is in focal attention during this process. At the completion of the reintegration (the reintegration being a tacit process), the principle finds its way into subsidiary awareness again, but remains accessible for future needs. In the mentoring mode, the mentor is alert to assess situations and to analyze those into elements, and at the same time ‘lives in’ the skillful practice of traversing the maps (levels) I have presented.

The novice must build the entire emerging edifice of his moral being on the initial trust in the mentor. Without trust the conative trait of the vector of tacit knowing, intellectual passions, cannot be activated. Without an activated conative trait, the cognitive trait is barren. In plain language, the mentoring relation starts with trust in order to instill principles, and only later are the principles drawn into focal awareness. Put another way, without the personal pole, the objective pole which is situated in reality, is severed from the self. The personal pole, the origin of the judicial attitude, sustains living principles. Therefore, the mentor, mindful of this grounding, guides the novice through the levels of ethical learning, of the emerging moral self.

To show how a new situation can be recognized, the mentor offers descriptions – consisting of information regarding human action as distinguished from events, information on processes and description of causes for such events. He offers explanations – for human action as intentional action (a teleological explanation) and explanations for action as falling under a certain ‘law’ or rule as distinguished from causal explanations (‘why’-s) for events which are subsumed under a ‘law.’ In the scheme of tacit knowing, teleological explanations are not reducible to consequences of behavior, as human intentions cannot be eliminated.

By mapping ‘showing and doing’ on the two poles of knowing, fact and value in moral action are connected on a continuum. This allows for validation of moral action, that is, moral action mapped on such a continuum is not subjective. (Indeed, subjective action cannot be moral action, as it is reflexive only onto the self and is not tied to objective reality). Furthermore, moral action is not derived from facts alone, but facts linked to values, that is, the objective pole of knowing linked to the personal internal pole.

Moral choices are premised on freedom of the act of choice manifested in the judicial attitude aspect of responsible judgment, and on the duty therefore for responsible action with respect to treating others *not* as means for one’s personal goals. The mentor fostered this attitude in the novice, keeping the principle of justice in sight. (The principle of justice encompasses subordinate principles) The principle of justice is the ‘content’ of the universalizability principle in ethics.

### **Part 3. From epistemological insight to an ethics of duty – a Neo-Polanyian ethics**

With respect to the epistemology of science Polanyi said that belief in the reality of scientific value guides the inquiry and allows reform of standards with universal intent, as well as allows respect for values and encourages inquiry.<sup>8</sup> Although the choices made are individual acts, the ideals and principles which guide action are universals in the sense of universalizable principles. Individual choices are commitments<sup>9</sup> Polanyi called ‘universal intent.’

‘*Universal intent*’ also functions in the ethical realm — *it becomes the judicial attitude*.<sup>10</sup>

The problematic issue arises with respect to principles, ‘standards and ideals’ which in the social sphere today are much more pluralistic than it was possible to have in the scientific community in Polanyi’s time or now. Polanyi *has not* developed a normative ethics, therefore his writings give no guidance in this regard. One has to look to the principles demonstrated by his actions in his lifetime, to see what he held to be normative.<sup>11</sup> A Neo-Polanyian tacit-knowledge ethics would unfold as follows:

Pluralism is a social necessity today. The idea that pluralistic expressions of ethical rules can be subsumed under a few universal principles is a workable idea if universal principles mean universalizable ones. Pluralistic expressions of ethical rules encourage inquiry and the development of a more mature judicial attitude and capacity for judgment – the commitment is made *not* to following a rule dogmatically, *rather* it is made to universal principles as guides. Pluralism would not be possible without the freedom of choice, which is also the precondition for tacit knowing. So the duty of the mentor, and later the ‘apprentice,’ is multi-layered: to recognize which of the plural paths he has chosen or can choose, and how this path relates to the universalizability principle.

This requires multiple, overlapping (but non-contradictory) and hierarchical memberships: for example, an adult is generally a member of more than one family, a member of a larger religious group (if any), an ethnic group which partially overlaps with the former, and a civic group of a nation or pan-national union independent of the religious group but higher in the hierarchy than any ethnic group.

<sup>8</sup> Polanyi, *The Tacit Dimension*, 69.

<sup>9</sup> *Ibid*, 77.

<sup>10</sup> See chapter 8, Figure 8.1 in S. R. Jha, *Reconsidering Michael Polanyi’s Philosophy* (Pittsburgh: Univ. of Pittsburgh Press, 2001).

<sup>11</sup> On Polanyi’s action-guiding principles throughout his life, see chapter 1, *ibid*.

These are not, need not be, exclusive commitments. Indeed, one can be a member of an ethnic group or a religious group and still have commitments to the civic values of a more inclusive nation or pan-national union.

The mentor's judicial attitude and capacity of judgment intelligently exercised by the guidance of a clear understanding of relation amongst principles, makes it possible for him to foster the emergence of the novice's judicial attitude and maturing capacity for judgment. In the ethical realm, normally principles and rules are in subsidiary awareness while one meets the elements of situations. The crucial mentoring task is to clarify the relationships amongst the rules to the novice, to go beyond the 'flat earth' view by directing the novice's attention back and forth between levels of elements, rules and principles. Without this skill, he will not be able to develop an understanding of the meaning of choices, and most importantly, he will not be able to tap his subsidiary awareness to reformulate standards and general maxims – he will only obey rules automatically rather than have self-determination. Self-determination is the core characteristic of free people. This does not exclude a rational acknowledgement of constraints by historical facts.

#### **Part 4. Tacit knowledge – Neo-Polanyian ethics amongst others**

It may be said that Neo-Polanyian ethics resembles a pragmatist approach, or that of a moral realist of the intuitionist sort, or perhaps a Kantian view. In certain respects, it does, yet it is none of these.

Like the pragmatists, the tacit knowledge ethics bypasses is-ought dualism, and relies on inquiry to solve moral problems when one is faced with an ambiguous situation or a plurality of rules. But it is not like the pragmatist approach, in that moral principles in tacit knowledge ethics are not hypotheses to be tested – that would lead to relativism.

Like the moral realists, a tacit knowledge ethics holds that moral principles override natural ones, but unlike them, holds that morality precedes epistemology,<sup>12</sup> because free will is a precondition for both choice and knowledge. Like the intuitionists among moral realists, tacit knowledge ethics holds that moral properties can be 'intuited' and that moral truth is 'non-epistemic.' However, both these terms are redefined in tacit knowledge ethics: 'intuit' means skillful guessing (tacit knowing at the personal pole), and 'non-epistemic' means that knowing is not

<sup>12</sup> This would reverse the order of Polanyi's architectonic, where epistemology was 'first philosophy' (i.e. came before all other branches). For recent works on ethics as first philosophy, see the writings of the phenomenologist (post-structuralist?) philosopher Emmanuel Levinas.

detached knowing, but lived knowing. In tacit knowledge epistemology, knowing at the external objective pole is grounded in the personal pole by the link of tacit inference in logic, and likewise in ethics, the claim of moral truth is grounded in truth itself by the link of judicial attitude.

Tacit knowledge ethics is like Kant's in that moral justification is *a priori* – but unlike in that experience is required for the acquisition of some of the constituent concepts, sensory and introspective; in tacit knowledge ethics, moral justification rests on principles held tacitly in subsidiary awareness. These principles are acquired by experience through the mentoring process. Kant's practical reason is like the 'judicial attitude' in that practical reason determines 'rules' for the will while the judicial attitude determines intentional action. And just as for the judicial attitude, so for practical reason, it is belief in moral principles, not dogma, that is the foundation for guiding coherent action. As in Kant, in tacit knowledge ethics, one is choosing and judging from the moral point of view *if and only if* one is willing to universalize one's maxim or rule. But this formulation works better in the negative: that which cannot be willed to be universalizable, is immoral.

For Kant, moral principles must be accessible to us for legislating for ourselves, and pure practical reason determines independently from sensibility the realm of freedom, and what ought to be. In the Neo-Polanyian ethics of tacit knowing, moral principles are accessible to us *after* training our awareness with the help of a mentor, by tapping into the subsidiary. This is so that we may make a responsible judgment with universal intent – all premised on freedom of the will. The ethics of tacit knowing is unlike Kant's in that the judicial attitude is not severed from sensibility. Is and ought, fact and value are linked rather than separated, and the empirical (fact) aspect is not relegated to a supplementary position. What is actually done is considered as a teaching tool for what ought to be done.<sup>13</sup> Yet what ought to be done (the value) is more fundamental. Tacit knowledge ethics is also unlike Kant's in that Kant's approach is to go 'from top down,' from the principle to rules to cases, while this proposal starts with cases, then taps into principles and rules, moving up and down the hierarchy.<sup>14</sup> Neo-Polanyian ethics is unlike Kant's, for a degree of pluralism must be worked out in the layer under the universal principles and taken into view when judgments are made in the hierarchy of principles under consideration.

<sup>13</sup> Empirical facts are also taken into consideration in the formalization of principles.

<sup>14</sup> It may be said that the full meaning of principles, of justice and duty, emerge as the ethical problem is worked through.

## Conclusion

In conclusion, the schematized epistemology of Neo-Polanyian tacit knowing in ethics is meant to be the grounding for intelligent action. The structural and functional models delineated above provide a conceptual map for such action. The structure of tacit knowing consists of subsidiary awareness and focal awareness and the two poles of from-to knowing. Subsidiary awareness is on the internal (personal) pole, focal awareness is on the external ('objective') pole. The function of tacit knowing has three aspects: selective, heuristic and persuasive, each having a conative and cognitive mode or trait. The driving force of this model is 'intellectual passion' which in ethics is the judicial attitude keeping the principle of justice in sight. Since the epistemology of tacit knowing presupposes free will, it must choose a duty bound ethics. Neo-Polanyian Tacit Knowledge Ethics is an ethics of obligation, a deontological ethics, with some features of both act- and rule-deontology. This makes sense in light of the 'two poles of knowing' model presented in Figure 1. Particular moral judgments are implicitly general, even though each situation may be 'unique.' Specifically, the analysis of tacit knowing model presented here hones the awareness of the mentor about his own processes of knowing, doing and persuasive acts, deliberately focusing on these processes and their grounding in free will. The mentor's understanding then serves his nurturing function, the training of the novice to attain awareness of these same functions in him. The ethical aspect is the duty to pass on this knowledge to enable the novice to become intelligently autonomous, to train him to develop the judicial attitude to enable him to make responsible judgments. Thus, both the morality of traits, that is being, and the morality of principles, that is doing, are fostered. However, the key is the fostering of the will to do right, that is fostering the 'intellectual passion' grounded in the judicial attitude.

**FREEDOM OF KNOWING**

**Introduction**

Polányi's most fundamental claim is that knowledge is always the knower's personal knowledge who essentially and personally contributes to knowledge. It has been almost a truism from Kant on that the subject has a substantial effect on knowledge. However, according to Polányi, it is not an abstract general subject, but the individual person who leaves her personal fingerprints on knowledge. Granted this it seems to threaten the objectivity immediately. It has been much discussed how subjectivist this position is, whether there is any justification for the universal – or at least intersubjective – validity of such knowledge. We can approach this problem from a slightly different angle, namely, through the freedom of knowing and, this way, we link this epistemological issue to some moral problems. The problem of Polányi's epistemological subjectivism can be transformed into the question of what are the limits of our freedom in knowing, what sort of constraints are there to temper individual fantasy.

The expression 'freedom of knowing' is equivocal as a genitive structure almost always is. On the one hand, it may refer to the freedom we enjoy in determining whatever we would like to know, or whatever we would like to take knowledge of. It is the freedom *in knowing*. On the other hand, this expression may refer to freedom that is provided by or generated by knowledge. The relationship between knowledge and freedom is discussed generally in the context of this second meaning. We control our environment, social and natural, through knowledge and we enlarge the territory of our freedom by means of this control. In this paper, however, I would like to focus on the first meaning of this genitive structure. Which is – I would like to suggest – prior to and a precondition of the second one. The freedom we enjoy in determining what and how to know is the foundation of and the precondition of knowledge, and hence, the freedom we enjoy by virtue of knowing something.

**Individual freedom in knowing**

Freedom is often understood as a playground or an opening within which, in our case, we are free to know whatever we want, or to take knowledge as we like. This playground is circumscribed by ontological, epistemological and social factors. Here we should consider both positive and negative freedom in terms of these factors.

On the **positive** side of our freedom, we find the infinity of the reality *and* the indeterminacy and infinity of our cognitive powers. Positive freedom means *freedom for*, that is to say, we may initiate whatever we would like to do. It is the infinity of the reality that opens up a playground for us to create the knowledge of our own, to see the world in a specific personal way. This infinity of reality is closely related to the indeterminacy of the subsidiary components of understanding and the infinity of our integrating capability. Our cognitive powers are part of the reality, hence infinite. Infinitely many and indeterminate subsidiaries may help us to integrate them into infinitely many meaningful wholes knowing ever-new unpredictable aspects of the world. This is true both for the innate psychological factors and the learned elements of the tacit knowledge, like for example our language. It is not determined and not determinable for us what subsidiary signs to take into consideration when we integrate to focal meaning and how to integrate them. Thus within this playground, we are free to determine the content of our knowledge.

It is an *individual* (or truly personal) freedom, as the cognitive act is guided by *my own* bodily and psychological setup, my own learning history, skills and passions. In other words, our knowledge is not determined by the epistemological situation or circumstances. Metaphorically, we are free to see the world as we like within the open playground.

This leads us to the related issue of **negative aspects of freedom**. Negative freedom is *freedom from*, that is to say, we are free from certain influences, certain compulsions. First of all, according to Polányi, our knowing is not completely determinable by rules, including the rules of rationality. Our cognitive power – as far as the tacit component is concerned – is free from the dictatorship of the rules of rationality. More explicitly it is free from both inductive and deductive methodologies. This entails that no given premises or epistemological set-up can and may determine what the resulting knowledge should be. A person is not a rule-following machine in this respect. Furthermore our understanding in general is not fully determined by rules whatsoever, neither semantic rules nor the rules of language-use can eliminate the essential indeterminacy of meaning. Meaning is realized in understanding by the essential contribution of the personal tacit knowledge, hence the indeterminacy of meaning.

By saying that it is not determined I mean – in Polányi’s vein – that it cannot be calculated by rules whatsoever, from the inputs, and the inputs do not causally determine them. The second follows from the first since, according to Polányi, reasons can not be reduced to causes. Consequently my account of freedom is in terms of reasons and not in terms of causes.

The results above are closely related to the fact that Polányi sees knowing as an act instead of as a representation. He sees the similarity between knowing and skills or practical activities. Knowledge is not a symbolic representation rather it is our

relation to the world. Knowing is creativity; it is the result of our personal creative contribution to the given epistemological situation or circumstances. Tacit components are part of our “virtual” body by which we act during our research and knowing. We are free to determine what to do with them, how to use them. But we are given certain constraints within which we can execute a cognitive action.

### **Constraints**

Now what constraints are there to stake out the playground of our freedom? What prevents us from pure subjectivity? After all you can believe what you like – and altogether knowledge is nothing but belief –, if you understand as you like, and if you have self-set standards for the criteria of the reasonableness of your beliefs. To prevent us from the freedom of daydreaming we have two factors: our cognitive powers *and* our commitments. Just to be clear, these are not meant to be disjunctive components of knowing, but they emphasize different aspects of constraints.

With our normal body and psyche we keep in touch with reality. As it is clear from Polanyi’s analysis of the ascent of our cognitive powers from biological levels to cultural ones, our cognitive powers are primordially evolved and brought about to maintain the closest connection with reality, to help us find our way in the world. The cognitive mechanism is not designed and primarily used to devise subjectivist daydreams. This latter is the derivative function of our cognitive powers requiring explanation and not the former.

The second element of compulsions, namely, commitment is an intentional link to reality. It involves that we are committed to our knowledge claims with universal intent. On making knowledge claims we try to tell other people truths about a reality believed to be existing independently of our knowing it. By claiming truth and concerning reality, all assertions carry universal intent. Universal intent is precisely the factor distinguishing the beliefs we consider knowledge claims from other beliefs having no such aspirations. Our holding a belief with universal intent entails that our belief is held true and concerns reality.

How can commitment delimit our freedom? Being committed involves that our psychological, moral and social existence is at stake. Under normal circumstances we give our name to our assertions signaling that we believe it and we have done our best to find the truth and this is the result. If we prove to speak nonsense too often then it will undermine our psychological self-image (regarding ourselves insane or untalented, etc.) and our moral self-image (being reckless, dishonest, etc.) and our social position (being incompetent, dishonest, etc.). Risking our

psychological, moral and social integrity seems to be the most powerful pressure on us that can be thought of, to make us resolutely strive for truth by using our cognitive powers properly and most effectively.<sup>1</sup> We are impelled to make our personal choice most prudentially within the domain of our free decision involved in knowing. Accepting a commitment is taking on a moral obligation with all the consequences it entails if not fulfilled.

This is not an ultimate guarantee for truth. We are fallible. But it exercises an ongoing pressure on us to improve our knowledge.

To sum up, *we can say that we do not enjoy moral freedom to believe what we like, but we enjoy cognitive freedom to know what we can depending our own cognitive powers*, but then we may stick to it also morally.

Let us not be misled by this formulation of the results. Commitment is just part of our cognitive powers. It is part of someone's personal capacity how far they can stand the pressure of risking their reputation, self-respect, job etc., and how flexibly they can comfort themselves with reassessment of the situation after a fiasco. Some can gamble on their whole private and professional existence even up to a lie or a professional sham while others cannot stand even the uncertainty involved in a normal scientific research project.

Seen from the other side, the factors limiting our freedom are the justifications for personal knowledge in the sense that they are reasons why we claim what we do. Justification is meant to be a guarantee for the cognitive reliability of the outcome of knowing, but it is not supposed to prevent us from false beliefs. If the realist conception of truth and the possibility of the check of correspondence between statements and reality are put aside, than *what better guarantee can we hope for the truth of an assertion than the researcher and the scientific community staking their reputation (and their existence in the long run) while they have done their best?*<sup>2</sup>

Before accepting a guarantee and thus a justification of this kind, obviously we should also see who is risking his existence and what sort of existence is at stake due to the commitment.

<sup>1</sup> It follows that Polányi supposes that the choice between the proper use of our cognitive powers and daydreaming is intentional. At this point, we are not ultimately, but may be temporally, at the mercy of some Gestalt-play of our psyche.

<sup>2</sup> „The result may be erroneous, but it is the best that can be done in the circumstances. Since every factual assertion is conceivably mistaken, it is also conceivably corrigible, but a competent judgement cannot be improved by a person who is making it at the moment of making it, since he is already doing his best in making it according to his commitment.” (Polányi 1958, p. 314.) *Mutatis mutandis* the same applies to the scientific community.

## **Transcendental conditions**

Let us turn back to the status of the assumptions above. It is an assumption of Polanyi's philosophy that the idea of reality, the idea of the universality of our claims, etc. are supposed to be shared by all knowers beyond all indeterminacy. Is it not a contradiction? Certainly, it may be interpreted that way; everything is person-relative, how is it possible that these ideas are universal as they stand? But perhaps a more charitable reading would consider these shared ideas as transcendental conditions of knowing at all, i.e. as conditions of the possibility of knowing. "(O)ur acceptance of this framework is the condition for having any knowledge."<sup>3</sup>

## **Polányi radicalizes the outlook of Enlightenment.**

The Enlightenment taught that man's freedom means that he is driven only by the laws of reason that are virtually the laws of mind and the essence of human nature. Self-realization is nothing but applying our universal reason to our particular situations and experiences, i.e., to our particular finite life. Freedom is based on knowledge, which is in effect based on the universal reason. According to my interpretation of Polányi we can accept this line of thought up to the point that freedom is based on knowledge, but it is not the knowledge of universal reason, rather it is a personal knowledge bearing the marks of the knowing individual. It results in a personal freedom instead of the freedom of universal reason, and "(t)his is ...our liberation from objectivism"<sup>4</sup>. Self-realization, accordingly, means that we grow ourselves according to, and, by means of personal knowledge integrating it into ourselves. Since no universal reason remained for us to trust in the personal responsibility, thus morality emerges already in knowing.

## **Reference**

- Polanyi, M. 1958 *Personal Knowledge*, London: RKP

<sup>3</sup> Polanyi 1958, 267. It is not alien to Polányi to take hierarchical structures as transcendental structures in which the higher level structure provides transcendental condition for the lower level structures. As, for instance, our biological setup is a precondition for our mind and social life. Polányi's arguments are also often directed to searching for preconditions. E.g. it is impossible to apply rules by the help of other rules, but we can apply rules therefore we must have a tacit cognitive power to do so.

<sup>4</sup> Polanyi 1958, 267.

## **Tibor Frank**

### **COHORTING, NETWORKING, BONDING: MICHAEL POLANYI IN EXILE**

Michael Polanyi was nurtured in the “happy peace times” of turn-of-the-century Europe. In a review of F. A. Hayek’s *The Road to Serfdom* for *The Spectator* in 1944 he fondly remembered the “good old days” when

before 1914 you could travel across all the countries of Europe without a passport and settle down in any place you pleased without a permit. The measure of political tolerance which commonly prevailed in those days can be best assessed by remembering local conditions which at the time were considered as exceptionally bad. The domineering and capricious personal régime of Wilhelm II was widely resented, even though it allowed, for example, the popular satirical paper, *Simplicissimus*, regularly to print the most biting cartoons, jokes and verse directed against the Kaiser. Europe shuddered at the horrors of Tsarist oppression, though under it Tolstoy could continue to attack from his country seat in Yasnaya Polyana with complete impunity the Tsar and the Holy Synod, and persistently preach disobedience against the fundamental laws of the State... After less than a generation, say in 1935, we find that all the freedom and tolerance which only a few years earlier had been so confidently taken for granted, has vanished over the main parts of Europe.<sup>1</sup>

After World War I the situation fundamentally and dramatically changed, particularly for Polanyi’s generation. New borders were established, cutting across the continent of Europe. Through much of the post-World War I era, Hungarian Jews were repeatedly in trouble. Groups of them were forced to leave their native country after 1919, Germany after 1933, and Europe after 1938, just to mention a few major turning points in European history.

#### **From Budapest to Berlin**

Networking, using available contacts and relying on people already established in Germany, was among the most natural methods used to secure a place somewhere

<sup>1</sup> Michael Polanyi, ‘The Socialist Error,’ *The Spectator*, March 31, 1944.

abroad, and particularly in Germany. A lot of people needed help and this induced a veritable “chain reaction.”

The situation became extremely difficult during World War I. When in 1916 Michael Polanyi inquired about his own prospects for a *Habilitation* under Professor G. Bredig at the Institute for Physical Chemistry and Electrical Chemistry of the University of Karlsruhe, he was politely turned down.

We are compelled, now after the War [has started] more than ever before, to take into account the public opinion which urges us to fill in the available places for *Dozenten* by citizens of the *Reich* as much as possible. Even though we like to treat the citizens of our Allies the same way as our own, you must have seen in my Institute that the situation was pushed so strongly in favor of them, that as of now, and more than ever before, I must see to attracting more Imperial Germans.<sup>2</sup>

A year later, Polanyi tried Munich and turned to Professor K. Fajans in what was then the Chemical Laboratory of the Bavarian State. Though his request was well received there and an offer was made to become an assistant to Dr. Fajans, Polanyi’s German plans did not materialize until after the War.<sup>3</sup>

An assistant to Georg de Hevesy during the Hungarian Republic of Council—a Bolshevik experiment that lasted through the Summer of 1919—Polanyi left Budapest at the end of 1919 and went to Karlsruhe where he had already studied chemistry from 1913-14.<sup>4</sup> Identified by many with the grossly failed Hungarian Republic of Councils of 1919, Hungarian Jews were punished in many ways and often forced to leave Hungary. Polányi was searching for a good job in Physical Chemistry. Seeking advice in regard to his future employment in Germany, he turned to Theodore von Kármán, a fellow-Hungarian and a distinguished Professor of Aerodynamics in Aachen, Germany.

Young Michael Polanyi’s questions to Von Kármán were answered politely but with caution. “The mood at the universities is for the moment most unsuitable for foreigners though this may change in some years; also, an individual case should

<sup>2</sup> G. Bredig to Michael Polanyi, Karlsruhe, February 12, 1917. (German) Michael Polanyi Papers, Box 1, Folder 5, Department of Special Collections, University of Chicago Library, Chicago, Ill.

<sup>3</sup> K. Fajans to Michael Polanyi, München, June 26 and October 5, 1918. (German) Michael Polanyi Papers, Box 1, Folder 5, Department of Special Collections, University of Chicago Library, Chicago, Ill.

<sup>4</sup> *Ibid.*

never be dealt with by the general principles. ... To get an assistantship is in my mind not very difficult and I am happily prepared to eventually intervene on your behalf, as far as my acquaintance with chemists and physical chemists reaches. I ask you therefore to let me know if you hear about any vacancy and I will immediately write in your interest to the gentlemen concerned.”<sup>5</sup>

After the War ended, the prospects for Hungarians in defeated Germany naturally got even worse. From 1920 on, Von Kármán helped a number of Hungarians start their careers in Germany, readily sponsoring friends of his family, often under the most adverse circumstances.<sup>6</sup> Several years later, in 1923, American visiting scholar Eric R. Jette described the German university scene in remarkably similar terms: “conditions in the universities were very bad, of course, in all places. The same story was heard everywhere, no money, no new professors or docents but laboratories filled with students who had almost nothing to live on. Yet the research goes on and the students still keep at their books.”<sup>7</sup> In little over a year, however, Jette received better news from Werner Heisenberg who “said that while the university people were not as well off as before the war, they were infinitely better situated than a year ago.”<sup>8</sup>

Nevertheless, Hungarians were difficult to turn down. The future engineering professor Mihály Freund asked for Polanyi’s assistance for a young relative, Tibor Bányai, who had just finished high school in Budapest and wanted to become an engineer at the University of Karlsruhe, where Polanyi had been active for some time. More importantly, in 1922 Polanyi paved the way for several people from Hungary to get a job. The most important cases were those of Leo Szilard and Imre Brody. Szilard tried to get an assistant’s job at the Institute of Physical Chemistry at the University of Frankfurt am Main. Szilard, of course, was well on his way to becoming a scientist in his own right. The degree he just received in Berlin under Max von Laue was the best letter of recommendation he could possibly present. Yet,

<sup>5</sup> Theodore von Kármán to Michael Polányi, Aachen, March 17, 1920, University of Chicago, Joseph Regenstein Library, Special Collections, Michael Polányi Papers, Box 17.

<sup>6</sup> Cf. e.g. the case of the son of his brother’s friend Michael Becz, see Elemér Kármán to Theodore von Kármán, Budapest, May 9, 1920 (German), Theodore von Kármán Papers, File 139.1, California Institute of Technology Archives, Pasadena, CA.

<sup>7</sup> Eric R. Jette to Michael Polanyi, Up[p]sala, February 10, 1923, Michael Polanyi Papers, Box 1, Folder 19, Department of Special Collections, University of Chicago Library, Chicago, Ill.

<sup>8</sup> Eric R. Jette to Michael Polanyi, Copenhagen, March 28, 1924, Michael Polanyi Papers, Box 2, Folder 1, Department of Special Collections, University of Chicago Library, Chicago, Ill.

under the circumstances, he did need Polanyi's letter to Frankfurt professor B. Lorenz, and Polanyi referred to Szilard as a "wonderfully smart man."<sup>9</sup>

In a letter written to Albert Einstein, Polanyi also supported physicist Imre Brody in 1922. In this important document Polanyi asked Einstein to write to the leaders of Robert Millikan's newly founded institute in Pasadena, CA so that Brody could get a job as an assistant.<sup>10</sup>

Of all the Hungarian scientists, however, Theodore von Kármán proved to be the most active and successful contact person whose German and subsequent U.S. correspondence provides a wealth of information on half a century of Hungarian networking. A typical letter from his German period was sent in 1924, by a Hungarian friend in Vienna, asking for his assistance with Hungarian chemical engineering student Pál Acél to continue his studies "in Germany, preferably under you."<sup>11</sup> Correspondence on these matters sometimes had to be clandestine: in dangerous years such as 1920, a reply to such mail was more prudent to send to Vienna, rather than Budapest, and picked up there personally.<sup>12</sup>

Students continued to try to study in Germany for several reasons, one of them being the commitment of the German professors to their gifted students and the great deal of time and interest they allotted to young people.

Professor Lipót Fejér asked fellow mathematician Gabor Szegő in Berlin in early 1922: "What does little Johnny Neumann do? Please let me know what impact do you notice so far of his Berlin stay."<sup>13</sup> In an 1929 interview, Michael Polanyi, since early 1923 a *habilitierter* Berlin professor himself,<sup>14</sup> proudly yet sadly described the essential difference between the contemporary Hungarian and German

<sup>9</sup> Michael Polanyi to B. Lorenz, October 16, 1922. (German) Michael Polanyi Papers, Box 1, Folder 18, Department of Special Collections, University of Chicago Library, Chicago, Ill.

<sup>10</sup> Michael Polanyi to Albert Einstein, March 14, 1922. (German) Michael Polanyi Papers, Box 1, Folder 17, Department of Special Collections, University of Chicago Library, Chicago, Ill.

<sup>11</sup> Elemér Székely to Theodore von Kármán, Wien, April 29, 1924. (Hungarian) Theodore von Kármán Papers, File 29.14, California Institute of Technology Archives, Pasadena, CA.

<sup>12</sup> Mihály Freund to Michael Polanyi, May 4, 1920. (Hungarian) Michael Polanyi Papers, Box 17, Department of Special Collections, University of Chicago Library, Chicago, Ill.

<sup>13</sup> Gabor Szegő Papers, SC 323, Boxes 85-036, Department of Special Collections and University Archives, Stanford University Libraries, Stanford, CA.

<sup>14</sup> Obersekretär Breuder [?], Technische Hochschule zu Berlin, to Michael Polanyi, Charlottenburg, November 8, 1923. (German) Michael Polanyi Papers, Box 1, Folder 20, Department of Special Collections, University of Chicago Library, Chicago, Ill.

educational scenes declaring that “professors in Germany grab with avid interest the hand of any student considered to be gifted. They are like the art-collector whose utmost passion is to discover talent. This is part of the profession of a university professor.”<sup>15</sup> It is important to note that his generation shared essentially the same experience later in U. S. universities: for *émigré* scholars and scientists, the welcoming atmosphere of German universities was happily rediscovered in, and partly transferred to, the United States.

One of the outstanding qualities of the post-World War I German environment was tolerance – political, religious, professional, and artistic. People, professions, ideas, and artistic products persecuted at home in Hungary were welcome in the open atmosphere of Weimar Germany. Béla Bartók’s pioneering ballet *The Miraculous Mandarin*, rejected and scorned in Hungary, found a sympathetic audience in Cologne, albeit for a single night only, where Hungarian-born Eugen Szenkár performed it for the first time in 1926.<sup>16</sup>

Moving to Germany was not only a question of survival in terms of studies, jobs, and promotions: it also meant an opportunity to resume one’s original professional activities or intellectual directions. It was not merely the acquisition of a new address: it led to the reconstruction of spiritual (and often bodily) health, the realization of the self, a restoration of the mind.

### ***‘Incipit Hitler:’*<sup>17</sup> Rescue Operations**

The international community of scientists and scholars showed a great deal of compassion for those being threatened by Hitler. They supported emigrating colleagues from Germany by providing the necessary organizational framework and material assistance,<sup>18</sup> providing for some 6000 highly qualified professionals to

<sup>15</sup> “Polányi Mihály Nádas Sándorhoz,” *Pesti Futár*, 1929, pp. 37-38.; repr. in *Polanyiana*, I/1, 1991, p. 26.

<sup>16</sup> József Ujfalussy, *Béla Bartók* (Budapest: Corvina, 1971), pp. 237-240; György Kroó, *A Guide to Bartók* (Budapest: Corvina, 1974), pp. 97-105. The ballet was not tolerated even in Cologne, where the conservative mayor of the city, Konrad Adenauer stopped the production.

<sup>17</sup> Stefan Zweig, *Die Welt von Gestern. Erinnerungen eines Europäers* (Fischer Taschenbuch Verlag GmbH, 1994), p. 411.

<sup>18</sup> For a well-written general survey of international efforts to rescue immigrant scientists and scholars from Germany see Laura Fermi, *Illustrious Immigrants. The Intellectual Migration from Europe 1930-1941*. 2nd rev. ed. (Chicago and London: University of Chicago Press, 1971), Chapter IV: The Roads to America, pp. 60-92.

leave Germany in quick succession.<sup>19</sup> A number of parallel initiatives emerged to bring about an effective framework for rescuing the community of German-Jewish scientists. Headquartered in Zürich, Switzerland, the *Notgemeinschaft Deutscher Wissenschaftler im Ausland* [Emergency Society of German Scholars Abroad] was founded largely as a result of the efforts of a Hungarian-born scientist. “Professor Philip Schwartz,” wrote Lord Beveridge in his *A Defence of Free Learning*, “Hungarian by birth but holding a Chair of General Pathology and Pathological Anatomy at Frankfurt-am-Main in Germany, [Schwartz] was an immediate victim of Hitler’s racial persecution and went in March 1933 to Zürich in Switzerland. There he founded at once the *Notgemeinschaft* and directed it for six months. ... For money it had to depend almost wholly on contributions from displaced scholars whom it had helped to re-establish. But by its personal knowledge of the scholars themselves and by using its contacts with universities everywhere, it [the *Notgemeinschaft*] rendered invaluable service,”<sup>20</sup> providing a list of nearly 1500 names of dismissed academics in Germany, which was published in 1936 with the assistance of the Rockefeller Foundation.<sup>21</sup>

The first major success of the *Notgemeinschaft* was an agreement with the Turkish government to place 33 German professors at the University of Istanbul. Similar arrangements were discussed with Australian, Indian, South African, Soviet and U. S. authorities as well as with the Committee for Intellectual Cooperation of the League of Nations.

In May 1933, scientists in Great Britain established the *Academic Assistance Council* (first conceived as the International Board of Scientists and Scholars) with Nobel Laureate Lord Rutherford as President and Sir William [later Lord] Beveridge and Professor C. S. Gibson as Secretaries.<sup>22</sup> A few weeks later the

<sup>19</sup> Cf. Herbert A. Strauss and Werner Röder, eds., *International Biographical Dictionary of Central European Emigrés 1933-1945*, (München - New York - London - Paris: K.G. Saur, 1983), Vols. I-II/1-2/III, xciv, 1316 p.

<sup>20</sup> Lord Beveridge, *A Defence of Free Learning* (London-New York-Toronto: Oxford University Press, 1959), pp. 128-129.

<sup>21</sup> Laura Fermi, *Illustrious Immigrants. op. cit.*, p. 62.

<sup>22</sup> Lord Beveridge, *op. cit.*, p. 2; Leo Szilard to Jacques Errera, London, June 4, 1933 (German), Leo Szilard Papers, Box 7, Folder 22; Benjamin Liebowitz to Ernst P. Boas, London, May 4, 1933, Leo Szilard Papers, Box 12, Folder 4, Mandeville Department of Special Collections, University of California, San Diego Library, La Jolla, CA. — The Council remained in existence until 1966, as the *Society for the Protection of Science and Learning*. Cf. Leo Szilard to unknown, May 14, 1933, Leo Szilard Papers, Box 12, Folder 21, Mandeville Department of Special Collections, University of California, San Diego Library, La Jolla, CA; Robin E. Rider, “Alarm and Opportunity,” *op. cit.*, p. 116.

*Emergency Committee in Aid of Displaced German (later Foreign) Scholars* was established as the American counterpart of the AAC to provide grants or fellowships to immigrant scientists and scholars.<sup>23</sup> The main contributions to the Emergency Committee funds came from Jewish foundations and individuals.<sup>24</sup>

Another support committee, the *Comité International pour la Placement des Intellectuels Réfugiés* was formed in Geneva, offering positions to refugee professors from Austria, Germany, and Italy.<sup>25</sup>

Jewish groups in Europe considered raising funds for a new university based on refugee faculty alone, an idea that originated in the mind of Albert Einstein who envisaged a *Flüchtlingsuniversität*, a refugee or emigrant university somewhere in Europe.<sup>26</sup> A longtime and valued colleague, Leo Szilard was able to convince Einstein “that this would not be an easy task,” and that he should “concentrate on one promising effort.”<sup>27</sup> This is how Einstein started to support the idea of the Academic Assistance Council. Another suggestion was to raise more money for the Palestine University.<sup>28</sup> Immediately after the recession, however, there was not enough money for any of these projects to materialize. Instead, several agencies provided relief of some sort, such as the *Jewish Relief Committee* in Amsterdam.

The academic community in the United States was horrified to learn of what was happening in Germany. German-born Franz Boas was one of the first to receive an authentic report from Benjamin Liebowitz who travelled throughout Europe

<sup>23</sup> Lord Beveridge, *op. cit.*, pp. 126-127; Karl Brandt Circular, New York, February 1, 1934 (German), John Von Neumann Papers, Box 7, “1933: Some very interesting letters to J. v. N.,” Library of Congress, Washington, D.C. — For details on the two institutions see Robin E. Rider, “Alarm and Opportunity: Emigration of Mathematicians and Physicists to Britain and the United States, 1933-1945,” *Historical Studies in the Physical Sciences*, Vol. 15, Part I (1984), pp. 107- 176, esp. pp. 116, 139.

<sup>24</sup> Robin Rider, “Alarm and Opportunity,” *op. cit.*, p. 144. Cf. Lord Beveridge, *op. cit.*, pp. 15, 126.

<sup>25</sup> Laura Fermi, *Illustrious Immigrants*, *op. cit.*, pp. 62-63.

<sup>26</sup> Albert Einstein to Leo Szilard, Le Coq-sur-Mer, April 25 and May 1, 1933; Leo Szilard to Albert Einstein, London, May 4 and 9, 1933 (German), Leo Szilard Papers, Box 7, Folder 27, Mandeville Department of Special Collections, University of California, San Diego Library, La Jolla, CA.

<sup>27</sup> Leo Szilard to Sir William Beveridge, Brussels, May 14, 1933, Leo Szilard Papers, Box 11, Folder 18, Mandeville Department of Special Collections, University of California, San Diego Library, La Jolla, CA.

<sup>28</sup> Leo Szilard to Sir William Beveridge, London, May 4, 1933, Leo Szilard Papers, Box 4, Folder 30, Mandeville Department of Special Collections, University of California, San Diego Library, La Jolla, CA.

collecting information and helping plan relief operations. “It is impossible to describe the utter despair of all classes of Jews in Germany,” he wrote in early May 1933 to Boas. “The thoroughness with which they are being hunted out and stopped short in their careers is appalling. Unless help comes from the outside, there is no outlook for thousands, perhaps hundreds of thousands, except starvation or the sleeping pill. It is a gigantic ‘cold’ pogrom. And it is not only against Jews; Communists, of course, are included, but are not singled out racially; social democrats and liberals generally are coming under the ban, especially if they protest in the least against the Nazi movement. Please note that I am not speaking from hearsay: I know people, friends in many classes - scientists, scholars, doctors, lawyers, business men, economists, etc.”<sup>29</sup> Ultimately, some 6000 displaced scholars and professional persons from Europe applied to the New York-based Emergency Committee, out of which 335 were granted assistance.<sup>30</sup> Hungarians applying for (and eventually receiving) grants or fellowships either left Germany in 1933-34 (I), or left Hungary after anti-Semitic legislation was introduced there in 1938-41 (II).<sup>31</sup> The incomplete list of indisputably Hungarian names includes:

- I. Ladislaus (László) Farkas  
Melchior (Menyhért) Pályi  
Otto Szász  
Gabriel (Gábor) Szegő  
Leo Szilárd  
Edward (Ede) Teller  
Paul (Pál) Neményi  
Imre Weisz

<sup>29</sup> Benjamin Liebowitz to Ernst P. Boas, London, May 4, 1933, Leo Szilard Papers, Box 12, Folder 4, Mandeville Department of Special Collections, University of California, San Diego Library, La Jolla, CA.

<sup>30</sup> Emergency Committee in Aid of Displaced Foreign Scholars, New York Public Library, Manuscripts and Archives Division, New York, N.Y.—For a brief history of the Committee see Laura Fermi, *Illustrious Immigrants*, *op. cit.*, pp. 76-78.

<sup>31</sup> *Ibid.*, 195 boxes of correspondence and papers.

- II. Dezső Rapaport  
Stephan Sárközi de Somogyi-Schill  
Egon Wellesz  
George Pólya  
Nelly Szent-Györgyi  
Ladislav (László) Tisza  
Charles de Tolnay  
Rusztém Vámbéry

The following Hungarians applied for aid to the Emergency Committee but were refused:

- I. Willy (Vilmos) Fellner  
A. B. Halasi  
Friedrich (Frigyes) Antal
  
- II. Elizabeth M. Hajós  
Michael Erdélyi  
Francis (Ferenc) de Kőrösy  
Eugene (Jenő) Lukács  
Elemér Balogh  
Zoltán Fekete  
Imre Ferenczi  
Béla Frank  
Nicholas (Miklós) Halász  
Péter Havas  
Hugo Ignotus  
Aurél Thomas Kolnai  
René Fueloep [Fülöp]-Miller  
Béla Bartók

Altogether some 65 Hungarians appear on the applicants' lists of the New York Emergency Committee. They were almost exclusively Jewish-Hungarian (certainly not Béla Bartók) and left their country, directly or indirectly, for the U. S., because they were Jewish. The greater part of these left Hungary after the institution of the anti-Semitic laws of Hungary between 1938-41. A sizable group, however, had already left in, or right after, 1933, through Germany. Even the small sample of people who turned to the Emergency Committee demonstrates that many who were registered as German when the 1933 exodus started were, in fact, immigrants to

Germany from Hungary. Their list included scientists Leo Szilard and Edward Teller as well as mathematicians Otto Szász and Gábor Szegő.<sup>32</sup>

Hungarians had a particular sensitivity to the emergency situation in Germany because of a strong sense of *déjà-vu*. The rise of anti-Semitism and anti-foreignism, as well as the persecution and threat they were subjected to in Germany was strongly reminiscent of the Hungarian ordeal of 1919-20. As it is well-known, the post-war emigration from Hungary to Germany was largely due to anti-Semitic legislation and other actions of the Hungarian government. This created a sensitivity, which made some of the Hungarians in Germany extremely active and successful leaders of the rescue operations that saved the lives and careers of several thousand scientists and scholars in Germany.

### **The Escape of Michael Polanyi**

Michael Polanyi was offered an opportunity to leave Germany before the Nazi takeover. In early 1932, the University of Manchester in Great Britain invited him to become professor of physical chemistry. Polanyi hesitated to leave Germany, “where I am rooted with the greater part of my being.”<sup>33</sup> He also felt that it was unfair to leave Germany when it was in such a difficult situation. “I am unwilling to leave a community which is currently in difficulty after sharing the good times earlier,” he answered to Professor Lapworth in Manchester. Nevertheless, he started to make inquiries into the situation at the University of Manchester and established a large set of preconditions in case he decided to come. He demanded that a new laboratory consisting of a suite of 8-10 rooms be built for him for the considerable

<sup>32</sup> This list is based on the documents of the Emergency Committee in Aid of Displaced Foreign Scholars kept in the Manuscripts and Archives Division of the New York Public Library, New York, N.Y. Robin E. Rider compiled a list of mathematicians and physicists who emigrated to the U. S. or to Britain which appears in the appendix of her excellent paper (*op. cit.*, pp. 172-176). Compared to my list, she added a few more émigré Hungarians such as physicists Gusztáv Kürti, Cornelius Lánzos, and Elisabeth (Erzsébet) Róna, as well as mathematicians Paul Erdős, Tibor Radó, and Stefan (István) Vajda. Yet, Ms Rider made no distinction between Germans and Hungarians among the immigrant scientists and gave no attention to Leo Szilard’s activities or to other Hungarian contributions to the establishment of the Academic Assistance Council or that of the Emergency Committee.—The names listed here are based on my own research. I am grateful to Dr. Gábor Palló for additional information based on his research in the same collection.

<sup>33</sup> Michael Polanyi to Arthur Lapworth, Berlin, March 15, 1932 (German), Michael Polanyi Papers, Box 2, Folder 8, Department of Special Collections, University of Chicago Library, Chicago, Ill.

sum of £20-25,000, equipped with apparatus costing £10,000 and complete with 8-10 “personal collaborators” to work with.<sup>34</sup>

The University of Manchester turned to the Rockefeller Foundation to support Polanyi’s new physical chemical laboratories, but was determined to go ahead with the plans itself even before the Foundation responded. Throughout the year 1932, intensive planning was carried out to prepare the venture and in mid-December, Vice-Chancellor Walter H. Moberly sent a formal invitation to Polanyi to take the Chair of Physical Chemistry at Manchester for an annual stipend of £1500.<sup>35</sup> As late as Christmas 1932, the University was in the midst of planning to erect the new building “as quickly as possible” so that it comply “fully with the requirements of yourself and Professor Lapworth.”<sup>36</sup>

By mid-January 1933, Polanyi came to the conclusion that he would not go to Britain. Two weeks before Hitler’s takeover he declined to accept the invitation to Manchester citing his unwillingness to settle for good in Manchester, as well as the poor climatic conditions of the area as his main reasons.<sup>37</sup> Though at first he believed that his military service during World War I would make him exempt from the early anti-Semitic legislation of the Third Reich and would leave him secure in his position at the University, he realized within weeks the gravity of his mistake. He indicated to his British friends that he had changed his mind and was now ready “to accept the chair in Manchester on any conditions that are considered fair and reasonable by the University, in consideration of the changes that have occurred

<sup>34</sup> A. J. [?] Allmand to Michael Polanyi, West Hampstead, May 17, 1932, Michael Polanyi Papers, Box 2, Folder 8, Department of Special Collections, University of Chicago Library, Chicago, Ill.

<sup>35</sup> F. G. Donnan to Michael Polanyi, London, May 19, 1932; Arthur Lapworth to Michael Polanyi, Manchester, June 3 and November 27, 1932; Walter H. Moberly to Michael Polanyi, Manchester, December 15, 1932; Michael Polanyi Papers, Box 2, Folders 8 and 10, Department of Special Collections, University of Chicago Library, Chicago, Ill.—By comparison, the average professor received £1200 p.a. at the University of Cambridge, according to Nobel Laureate Paul A. M. Dirac (Physics 1933). P. A. M. Dirac to John Von Neumann, Cambridge, January 12, 1934, John Von Neumann Papers, Box 7, “1933: Some very interesting letters to J. v. N.,” Library of Congress, Washington, D.C.

<sup>36</sup> E. D. Simon to Michael Polanyi, Manchester, December 22, 1932, Michael Polanyi Papers, Box 2, Folder 10, Department of Special Collections, University of Chicago Library, Chicago, Ill.

<sup>37</sup> Michael Polanyi to Arthur Lapworth, Berlin, January 13, 1933; Michael Polanyi to F. G. Donnan, Berlin, January 17, 1933, Michael Polanyi Papers, Box 2, Folder 11, Department of Special Collections, University of Chicago Library, Chicago, Ill.

since January.”<sup>38</sup> It was almost too late: Manchester had in the meantime invited an organic chemist, and though a modest invitation was in fact extended to Polanyi as a third professor, “the University could not give a salary of more than £1250, and as they have in the meantime embarked on other projects as capital expenditure, they would not be able to embark on the proposed new laboratory for at least two or three years.”<sup>39</sup> Also, an invitation in early May 1933 to take a Research Professorship in Physical Chemistry at the Carnegie Institute of Technology in Pittsburgh, Pennsylvania, came again too late: by then Polanyi, well known in the United States from Princeton to Minnesota, had made his arrangements to go to England.<sup>40</sup> On April 26, 1933 the *Neues Wiener Abendblatt* reported the resignation of Professor Polanyi in Berlin; on July 14 *The Manchester Guardian* announced his invitation to the Chair of Physical Chemistry at the University of Manchester.<sup>41</sup>

It is important to observe closely Polanyi’s hesitation to relocate to Manchester in 1932-33. For people like Polanyi, deeply rooted in the ideas and ideals of 19th century liberalism, with a tolerant vision of the world and of science, it was difficult to accept the reality of the brutal and manipulative forces of interwar totalitarian systems. He belonged to a generation of scientists which, for the first time in human history, had to witness, and were consequently shocked by, the misuse of science for terrifying autocratic purposes. Polanyi first noticed these threats to freedom in the Soviet Union where he had paid well documented visits in 1930, 1932 and 1935. According to a note in his *Personal Knowledge* he met with Bukharin, who had even personally tried to convince him “that pure science, as distinct from technology, can exist only in a class society.”<sup>42</sup> In due course the director of the Institute of Physical Chemistry in Leningrad, the prospective Nobel Laureate Nikolai N. Semenov, offered a department to Polanyi in his institute; Polanyi declined the job but

<sup>38</sup> Michael Polanyi to F. G. Donnan, [Berlin, n.d.] draft, Michael Polanyi Papers, Box 2, Folder 11, Department of Special Collections, University of Chicago Library, Chicago, Ill.

<sup>39</sup> F. G. Donnan to Michael Polanyi, London, April 7, 1933, Michael Polanyi Papers, Box 2, Folder 11, Department of Special Collections, University of Chicago Library, Chicago, Ill.

<sup>40</sup> Thomas S. Baker to Michael Polanyi, May 10 and June 1, 1933, Michael Polanyi Papers, Box 2, Folder 12, Department of Special Collections, University of Chicago Library, Chicago, Ill. Cp. William Foster, “Princeton’s New Chemical Laboratory,” *Journal of Chemical Education*, Vol. 6, No. 12, December, 1929, pp. 2094-2095.

<sup>41</sup> Clippings, Michael Polanyi Papers, Box 45, Folder 3; Box 46, Folder 4; Department of Special Collections, University of Chicago Library, Chicago, Ill.

<sup>42</sup> Michael Polanyi, *Personal Knowledge*. Towards a Post-Critical Philosophy (Chicago, Ill.: The University of Chicago Press, 1958), p. 238.

consented to come to Leningrad for regular consultations (for six weeks twice a year).<sup>43</sup> At this point, around 1932, Michael Polanyi came to accept the opinion of his brother who at that point was very critical of what went on in Stalin's country and, as Karl reported happily to their mother, they reached an understanding as to "our views of the Soviet Union that were dividing us for such a long time [and] now considerably coincide."<sup>44</sup>

It was at this junction that Polanyi was forced to understand the potential threat of a political change in Germany as well. Almost until it was too late, he had believed in the strength and survival of all the tolerant and liberal political and social values of Weimar Germany and found a right wing takeover unlikely. Polanyi was not alone in his misjudgement: as late as January 1933 the operetta *Ball im Savoy* by Hungarian Berliner Paul Abraham was played with enormous success in Berlin and sung by Hungarian stars Gitta Alpár and Rózsi Bársony — a composer and two singers who, within a matter of a few weeks, had no place in Hitler's Germany officially turned anti-Semitic.<sup>45</sup> Fairly recent films like *Cabaret*, *Mephisto*, or *Julia*, or the short stories of British author Christopher Isherwood chronicled the breathtaking immediacy of change from Weimar to Nazi Germany. Living the sheltered life of a Berlin University professor, Polanyi, with many other refugee foreigners as well as Germans, was in fact both unprepared and unwilling to realize the dangers of an eventual Nazi dictatorship. He received ample warning: already in the Summer of 1932, friends urged him to give up his naiveté as to the chances of preserving the political situation in Germany. "If we lift our leg we must put it down

<sup>43</sup> N. Semenoff—M. Polanyi Correspondence, 1930-1932, Michael Polanyi Papers, Box 2, Department of Special Collections, University of Chicago Library, Chicago, Ill. Cp. *The New Encyclopaedia Britannica*, Chicago, 1990, Vol. 10, p. 629. — Other Hungarians in Berlin also received invitation to work in the Soviet Union: young musician János Kerekes, then in Berlin, was contracted in 1934 by conductor György Sebestyén [Georg Sebastian] who then served as music director of Radio Moscow, though the plan to become his assistant ultimately failed. The contract referred to a "Verpflegung wie für ausländische Spezialisten," suggesting that the invitation of foreign experts was routine (János Kerekes' contract with Radio Moscow, courtesy János Kerekes; taped interview with Budapest Opera conductor János Kerekes, 1988). Indeed, somewhat earlier, in 1928, Hungarian violinist Joseph Szigeti was also invited to the Leningrad Conservatory to be the follower of Hungarian-born violin professor Leopold Auer. (A[lexander K]. Glazounow, A. Ossowsky and A[lexander V]. Alexandrow, Conservatoire de Léningrad to Joseph Szigeti, Leningrad, 1928, Boston University, Mugar Memorial Library, Joseph Szigeti Papers, Box 1, Folder 3.)

<sup>44</sup> Karl Polanyi to Cecil Polányi, September 27, 1932, [German] Michael Polanyi Papers, Box 18, Folder 2, Department of Special Collections, University of Chicago Library, Chicago, Ill.

<sup>45</sup> Personal memories of Mrs. Éva Kerekes, August 1994.

somewhere, forwards or backwards, right or left!”<sup>46</sup>— he was urged by a friend of the family.

Radical shifts in the German political scene seem to have represented a much more fundamental shock for Polanyi than totalitarian symptoms in the Soviet Union. For liberal, often left-wing émigré intellectuals and professionals from post-War Hungary, it was a painful and threatening experience to realize that the country which throughout the 1920s had proved to be a lasting shelter, was now about to stop serving as a political asylum: Weimar Germany was being rapidly transformed into the terrorizing Third Reich. It was almost unfathomable that the freedom of Europe he had experienced as a young man was gone.

That Polanyi’s philosophical inquiries grew out of not only his scientific investigations but, to a great extent, the political drama he witnessed in Germany as well as in the Soviet Union, was clearly indicated in his 1933 correspondence with Eugene Wigner who reflected on his friend’s concerns as to the purpose of science. It was the twin experience of Soviet-Russian and Nazi-German totalitarianism, a shock for Polanyi’s entire generation,<sup>47</sup> that ultimately forced him to accept asylum in England. Fully understanding in 1934 the nature of forces threatening his freedom, and the freedom of science in general, he started to make a “Copernican turn,” changing not only his country of residence but also his language and his field of research. In this sense, Polanyi chose a very special, complex form of emigration: first he left medicine, then Hungary and the Hungarian language, then he left Germany for Britain, as well as science for philosophy, and chose English rather than German as an exclusive language of publication. It was due to this enormous change that he felt compelled to define and understand the social position of knowledge and science. Throughout his long journey from the “peace” of pre-World War I Hungary through Weimar Germany and into England, Polanyi pursued democracy and a liberal scientific atmosphere, broadening at the same time his own intellectual horizon, from a narrower scientific discipline, towards a philosophy of knowledge that was to become sensitive to both ethical and political issues. “I must admit,” Wigner wrote to Polanyi from Budapest,

that the difficulties that I felt so acutely in Berlin are somewhat blurred here. It is so difficult to speak of these things — I think we are afraid that we may come to a ‘false’, i.e. unpleasant result. We have all gone through these

<sup>46</sup> “Márti” to Michael Polanyi, Stary Smokovec, Czechoslovakia, July 30, 1932, (Hungarian) Michael Polanyi Papers, Box 2, Folder 8, Department of Special Collections, University of Chicago Library, Chicago, Ill.

<sup>47</sup> Laura Fermi, “The Dictators and the Intelligentsia,” in *Illustrious Immigrants*, *op. cit.*

questions at the age of 18 and had to give them up as insoluble, and then we have forgotten them. At our age when one is no longer geared so very much towards success, it is more difficult to do so. It seems to be an undertaking of ridiculous courage to be willing to question whether or not all that we have lived for, culture, righteousness, science, has a purpose. ... I know that you have been dealing with these thoughts for a long time. ... Even if the basic problem is insoluble, when the purpose of science is concerned particularly, ... the answer must contain the basic questions.”<sup>48</sup>

Polanyi’s combined inquiries as a scientist and a philosopher resulted ultimately in the 1951-52 Gifford Lectures at the University of Aberdeen in Scotland which served as the basis of his celebrated *Personal Knowledge*.<sup>49</sup> Becoming a philosopher seems to have been Polanyi’s way out of the frustrations that he faced as a scientist.

### **The Anatomy of Networking: American Patterns**

Bonding, networking, cohorting within and, less often, between various factions of the Hungarian exile community became more intense than ever during the War years, all of which was abundantly documented by their correspondence.

Understanding the nature of networking is essential to appreciating the social structure of immigrant groups and their ties to prospective newcomers. Because the bulk of the U.S. immigration quota was earmarked by preferences for one sort of immigrant or another, and non-quota emigration was greatly dependent upon letters of recommendations, affidavits and invitations from fellow nationals who had become U. S. citizens, the social composition of the exile community was virtually self-perpetuating.<sup>50</sup> Because of this, there was very little chance to incorporate new

<sup>48</sup> Eugene Wigner to Michael Polanyi, [Budapest,] June 30, 1933, Michael Polanyi Papers, Box 2, Folder 12, Department of Special Collections, University of Chicago Library, Chicago, Ill.

<sup>49</sup> Michael Polanyi, *Personal Knowledge*. Towards a Post-Critical Philosophy (Chicago, Ill.: The University of Chicago Press, 1958).

<sup>50</sup> Patterns of networking were occasionally different in Britain, where intellectual organizations occasionally welcomed distinguished Hungarian newcomers such as Karl Mannheim and Michael Polanyi, who joined e.g. the progressive circle of ‘The Moot’ between 1937 and 1946. Cp. Éva Gábor, “Michael Polanyi in The Moot,” *Polanyiana*, Vol. II (1992), Nos. 1-2, pp. 120-127. See also Lee Congdon’s book on Hungarian exiles in Britain, *Seeing Red: Hungarian Intellectuals in Exile and the Challenge of Communism* (Dekalb, Northern Illinois University Press, 2001) xii, 223.

elements or groups. Farming areas welcomed prospective farmers, professionals attracted fellow professionals, Gentiles invited Gentiles, and Jews welcomed Jews. Thus, American immigration policies, especially during the long period between 1924 and 1965, contributed to the growth and stable characteristics of existing social patterns in the immigrant communities. Even though we have had access to a limited number and type of sources regarding this information, based on the private papers of Jewish-Hungarian scientists and other professionals, this observation seems valid. Statistical evidence regarding all U. S. immigrant visas issued, including enclosed personal material, still needs to be examined. Nonetheless, it may prove enlightening to survey some case studies which have become available.

Jewish-Hungarians were first warned of the increasing Nazi danger by the *Anschluss* of neighboring Austria by Germany. As the small Hungarian quota was entirely filled for years ahead, immigration into the U. S. seemed possible only for scientists who had received an invitation to a particular university or research institute. Thus, many scientists embarked on a desperate struggle to obtain invitations. "I beg you to give me your assistance in this difficult situation," pleaded the eminent Viennese-Hungarian mycologist József Szűcs to potential employers through his mentor, Theodore von Kármán, who was one of the most willing supporters of refugee scientists.<sup>51</sup> Also begging for Von Kármán's support was a young aeronautical engineer, Miklós Hoff from Budapest, who himself did indeed receive his first U. S. job, as an instructor in Brooklyn, through Von Kármán.<sup>52</sup> Vilmos Szilasi explained to his cousin Theodore von Kármán that the letter of affidavit should make it very clear that "you knew me since our childhood and give the explicit assurance, that my immigration would not be inimical to the interest of the United States" and "that you assume the responsibility of keeping yourself informed of my conduct in the U. S. as well as immediately reporting to the Department of Justice any irregularity in my activities."<sup>53</sup>

An invitation by itself was not enough: appointments to a particular job had to be for at least two years. When Professor Gábor Szegő secured sufficient funds to invite for a year to Stanford his longtime associate and friend, the distinguished

<sup>51</sup> Dr Josef Szűcs to Theodore von Kármán, and Enclosure, Wien, June 29, 1938, Theodore von Kármán Papers, File 29.20, California Institute of Technology Archives, Pasadena, CA.

<sup>52</sup> Miklós Hoff to Theodore von Kármán, Budapest, September 19, 1938 and Palo Alto, CA, April 20, 1940, Theodore von Kármán Papers, File 13.20, California Institute of Technology Archives, Pasadena, CA.

<sup>53</sup> Wilhelm Szilasi to Theodore von Kármán, Lisboa, May 20, 1941, Theodore von Kármán Papers, File 29.20, California Institute of Technology Archives, Pasadena, CA.

mathematician George Pólya from Switzerland, “the American Consul in Zurich refused to admit him on non-quota basis because of the temporary character of the appointment.”<sup>54</sup> In a desperate attempt to get his friend out of Europe, Szegő turned to Von Kármán to secure an additional invitation for Pólya from CalTech. “You understand that although Pólya is not in a concentration camp and not yet dismissed, his situation is very dangerous and he tries desperately to get out before it is too late,” Szegő wrote to Von Kármán.<sup>55</sup> “It is not necessary to stress how urgent the case is. Every day may bring new restrictions and difficulties.”<sup>56</sup> The Pólyas left Zurich via Portugal for the U. S. in 1940 where Pólya ultimately succeeded in obtaining a two year teaching position at Brown University and Smith College before joining the Stanford Faculty in 1942, to remain there until the end of his very long life.<sup>57</sup>

The noted Budapest lung and TB specialist Gyula Holló, a member of the Polányi family and a personal physician of Béla Bartók, Dezső Kosztolányi, Frigyes Karinthy and Joseph Szigeti, turned to his former patient John Von Neumann to support him

by drawing the attention of some influential person who could help me to get a job or an invitation or give instructions through the State Department to the Consulate in Budapest so that I get a non-quota place (which is not unprecedented) or, and this seems to be the most realistic idea, prepares the way and helps me if I come as a visitor searching for a job personally.<sup>58</sup>

Dr. Holló succeeded in getting out of Hungary and accepted a position at

<sup>54</sup> Gábor Szegő to Theodore von Kármán, Stanford, July 24, 1940, Theodore von Kármán Papers, File 23.35, California Institute of Technology Archives, Pasadena, CA.

<sup>55</sup> *Ibid.*

<sup>56</sup> *Ibid.*

<sup>57</sup> G[abor] Szegő to George Pólya, Stanford, June 11, 1940; President Henry M. Wriston to Georg Polya [sic], Brown University, Providence R.I., July 31, 1940; George Polya Papers, SC 337, 86-036, Department of Special Collections and University Archives, Stanford University Libraries, Stanford, *The Life of Mathematician George Pólya, 1887-1985*, Department of Special Collections and University Archives, Cecil H. Green Library, Stanford University Libraries, December 13, 1987-June 1988 (Exhibit Guide)

<sup>58</sup> Gyula Holló to John von Neumann, n.d. [1939?], John von Neumann Papers, Box 6, Library of Congress, Washington, D.C.

Goldwater Memorial Hospital and died in New York City in 1973.<sup>59</sup>

As the War came nearer to Hungary, the non-quota contingent became filled for years ahead, mostly by pure and applied scientists, medical doctors and mathematicians. Yet, many did not succeed in getting an invitation. The celebrated Budapest surgeon, Professor Lajos Ádám was told that the Mayo Clinic in Rochester, Minnesota would not extend an invitation although Dr. C. W. Mayo counted him “as one of my very good friends.” Ádám’s well-known and well-connected Hungarian-American protector, the journalist and author Emil Lengyel, was told that “we are up against conditions here at present which make it impossible for us to guarantee bringing him here as a Professor or to guarantee any salary.”<sup>60</sup> Ádám stayed in Budapest and fortunately survived the War.

In the meantime, many non-scientists managed to get out. Refugees included many people from the world of film and theater, entertainers, literary people, actors, directors and musicians. In early 1940, Von Kármán had the distinct impression that “New York and Los Angeles are full of newcomers from Budapest, but almost exclusively artists, actors, and writers. Certainly more than half of the music and literature is now in the United States,” he commented to a friend in Hungary.<sup>61</sup> Much later, in the 1950s, Michael Polanyi himself sought to move to the University of Chicago, but because of his brother’s leftist political entanglement in pre-World War I Hungary, he was refused entrance to the United States.

For people naturally dependent upon their native language and culture, immigration was merely the lesser of two evils. It may have saved their life but, in many cases, emigration nonetheless turned out tragically.

## Conclusion

The close cooperation of Hungarian émigré scientists and scholars at times of trouble and need brought about a rather strong and durable exile community, international in nature and very personal in character. The remarkable presence of Hungarian scientists and scholars, artists and authors, musicians and film people on the international intellectual and professional scene at large is partly an outgrowth of what I’d prefer to call the chain reaction of support that ran across generations,

<sup>59</sup> *Magyar Életrajzi Lexikon*, Vol. III (Budapest: Akadémiai Kiadó, 1981), p. 311.

<sup>60</sup> Dr. C. W. Mayo to Emil Lengyel, May 19, 1941, Emil Lengyel Collection, Bakhmeteff Archives, Butler Library, Columbia University Library, New York, N.Y.

<sup>61</sup> Theodore von Kálmán to Lajos Bencze, February 19, 1940, Theodore von Kálmán Papers, File2.24, California Institute of Technology Archives, Pasadena, CA.

professions, race and, at times, gender. The intimate bonds of the home community were imported to and reestablished on the broader stage of the world. In a strange new sense, the personal ties with the fellow-Hungarians contributed to the strong international presence and success of Hungarian professionals as a virtual community abroad. Building this virtual community created a strong representation of scientific and scholarly Hungary in exile.

Only a thorough comparative research can determine how far the Hungarian case differed from other international examples. But it is safe to say in conclusion that networking, cohorting, and personal friendship did certainly contribute to what Laura Fermi and others in her footsteps called “The Mystery of Hungarian talent,”<sup>62</sup> the enormous intellectual contribution and success of Hungarians worldwide. Certainly it is worth giving more attention to this relatively neglected dimension of the social condition of science and scholarship.<sup>63</sup>

<sup>62</sup> Laura Fermi, *op. cit.*, p. 53-59.

<sup>63</sup> Cf. Jean Medawar & David Pyke, *Hitler's Gift. The True Story of the Scientists Expelled by the Nazi Regime* (Arcade, 2001).

## **POLANYI'S ENVIABLE ALMA MATER PART ONE**

**Presented by Tamás Bendik**

The Hungarian word 'Minta' stands for 'pattern', 'model', 'paragon' depending on the context. Michael Polanyi's alma mater was nicknamed 'Minta' from its very inception. Because it was meant to be and became a model of a new Hungarian teacher training college and high school.

The first teaching day of the school was the 7th of October 1872, with 25 students in two classrooms. 5 years after the compromise with the Habsburgs, the time was ripe for the Hungarian government to proceed to the implementation of its inspired and innovative ideas in the field of public education. The vision of nation-building as well as capitalist industrial production were gaining momentum and required urgent changes in schooling for the people and in training of its teachers and educators. New type schools were badly needed to shape clerks and officers for the independent Hungarian government departments and public offices. Civil engineers, scientists, entrepreneurs were in short supply, too. Even the military career required a so-called 'maturity' certificate of secondary education.

Institutional teacher training and accreditation in Austria meant that after three full university years the undergraduate could stand for a secondary school teacher's qualifying exam, but only in a few designated cities, all in Austrian provinces. The new Hungarian state needed its own system of teacher training centered in Budapest.

The 'Minta' model school was preceded by the teacher-training college of the Pest University's Faculty of Liberal Arts. The college was founded by József Eötvös, minister of public education and reformer of secondary education. He started out from the assumption that the bulk of the contemporary teaching staff were poorly trained in their disciplines and used rigid and soulless methods of teaching. In order to break the Prussian pedagogical tradition, it was necessary to adapt university training in scientific disciplines to the needs of teaching at secondary level and adopt new European trends of teacher training. But conservative university professors opposed both, referring to their professional independence. This allowed Eötvös to convince the government to establish a separate college attached to the faculty to train grammar school teachers, and another one attached to the Polytechnical University for vocational ('Real') school teachers. When building the two colleges, Eötvös and his followers used progressive examples from France and Germany. But unlike the French École

Normale Supérieure, for instance, Eötvös insisted that the ‘Tanárképezde’ (Hungarian word for ‘teacher training college’) be kept within the university structure to maintain a higher standard of scientific education and research for teacher trainees.

The departments of the college corresponded to the mix of school subjects the would-be teachers were supposed to teach. Their functioning was modelled after the German university seminars, but unlike in that country, department heads didn’t act independently from each other. In Budapest they were called ‘pilot teachers’ and acted in a concerted manner, under the guidance of the college director appointed by the minister of education in accordance with the collective recommendation of the staff.

The college’s statute adopted on the 3rd of May 1870 stipulated that all those who intended to become secondary school teachers must undergo thorough training in the chosen disciplines, in methods of their teaching, as well as be motivated for research. The statute also established the five departments of the college, such as:

1. classical languages and literature,
2. history and geography,
3. maths,
4. sciences,
5. educational and teaching studies.

The last one was decided to be launched after the first set of students completed studies at one of the other departments.

In 1871 the then 28 years old Mór Kármán, a protégé of József Eötvös, returned from his studies of philosophy and philology in Vienna and of teacher training in Leipzig. He was entrusted by the first director of the Teacher Training College to work out the concept of its educational department. Kármán’s concept contained the idea of a *grammar school to serve as an internship clinic and test ground for aspiring teachers*. To avoid the opposition of the conservative university management to a daring reform proposal by a young scholar fresh from abroad, Kármán consented that the concept be pushed through the bureaucracy under the name of Antal Bartal, the first college director. He even solved the problem of funding the grammar school, which hadn’t been earlier envisaged by the founders of the college. He argued that the study abroad grants for would-be teachers failed to provide an adequate return, since too many scholarship holders did not acquire adequate practical teaching skills abroad or avoided the teaching career altogether. The argument was found to be valid, and in 1872 the so-called ‘Practice (Demonstration) Grammar School’ was launched. In its mission statement one could read: ‘... to serve as a model of a school life wherein the pupils’ moral and intellectual advancement is the concern of the entire teaching staff, the teacher-trainees find a motivating example to follow and the teachers an inspiring memory to take away when they retire or quit.’

In 1875 legal regulations were adopted to allow for secondary school teachers to be accredited in Budapest, instead of in Vienna. This allowed the college and the Minta demonstration school to fulfill its pioneering vocation.