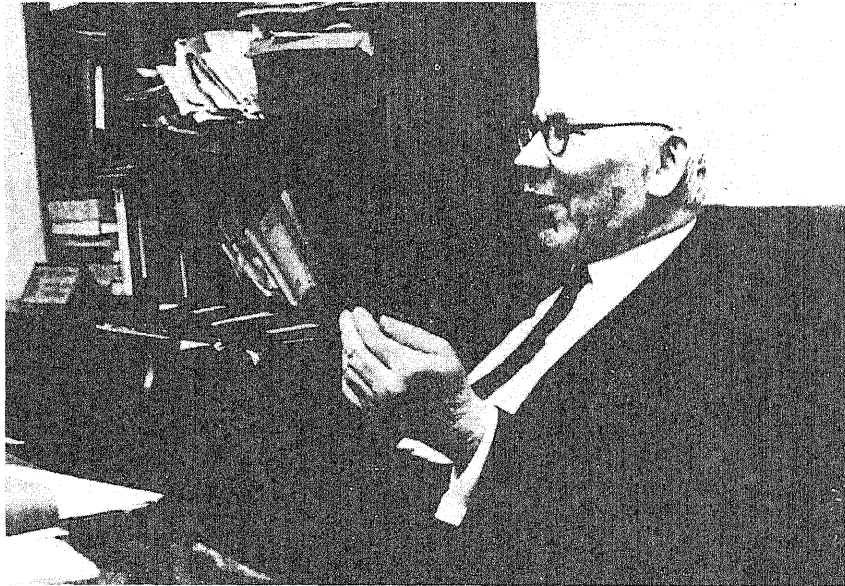


WŁADYSŁAW ORLICZ

24 May 1903 — 9 August 1990



W. Orlicz

Władysław Orlicz was born in Okocim, a small town in the district of Cracow. In 1919 his family moved to Lwów where he completed his secondary education and then studied mathematics at the Jan Kazimierz University. In the years 1922–1929 he worked as a teaching assistant at that university. He received his Ph.D. in 1928 upon presenting a thesis on orthogonal series. In 1933 he was granted *veniam legendi*. In the years 1929–1931 he held a fellowship at the University of Göttingen. Then from 1931 to 1937 he was a teaching assistant and later an assistant professor at the Chair of Mathematics led by Antoni Łomnicki at the Lwów Technical University. In 1937 Władysław Orlicz was promoted to the rank of associate professor at the University of Poznań. He spent the war years in Lwów taking part in the underground teaching activities of the Polish Resistance.

In May 1945 Władysław Orlicz returned to the University of Poznań to his prewar post, and from that time on he was permanently associated with the Poznań centre of mathematics. In 1948 he was promoted to full professor. From the moment of establishing in 1948 the State Mathematical Institute (renamed later the Mathematical Institute of the Polish Academy of Sciences) Władysław Orlicz was active both at the Institute and at the University of Poznań. He retired in 1974.

Władysław Orlicz started his mathematical career with his first paper *Zur allgemeinen Limitierungstheorie* published in the Tôhoku Mathematical Journal, vol. 26 (1926). He was active in mathematics till the very last moment. During his busy life he published close to 170 mathematical papers, about 50% of which were written in cooperation with different authors. Orlicz is one of the founders of the **Lwów School of Functional Analysis**. His contribution is essential to the following theories: *Orthogonal Series, Real Functions, Summability Methods, Measure and Integral, Vector-Valued Functions, Metric Locally Convex Spaces, Saks Spaces, Polynomial Operators, Unconditional Convergence in Banach Spaces, Interpolation of Operators, Modular Spaces*.

As a university teacher Władysław Orlicz educated many mathematicians, he promoted over 500 master theses and 39 Ph.D.'s.

The contribution of Władysław Orlicz to science and his achievements in mathematical education received high esteem. In 1956 he was elected a corresponding member of the Polish Academy of Sciences and in 1961 its full member. The York University in Canada (1974), the Poznań Technical University (1978) and the University of Poznań (1983) conferred upon him the title of *Doctor honoris causa*. He was elected honorary member of the Polish Mathematical Society and honorary president of the International Congress of Mathematicians, Warsaw 1983. He was awarded many high state decorations and prizes. His numerous distinctions include: the Order of a Distinguished Teacher, Copernicus Medal of the Polish Academy of Sciences, Waclaw

Sierpiński Medal of the Warsaw University, the Medal of the Commission for National Education and the Alfred Jurzykowski Foundation Award.

Władysław Orlicz was closely associated with this journal, he published in it 54 of his papers starting from volume 1. In 1936 he became a member of the editorial board and in 1962 the editor-in-chief.

For a more detailed account of the work of Władysław Orlicz we refer to his two-volume *Collected Papers* published by PWN—Polish Scientific Publishers, Warsaw 1988.

Władysław Orlicz passed away suddenly in Poznań while proofreading one of his papers. The mathematical community lost the senior Polish mathematician, the very last representative of the **Banach School**.

On pointwise ergodic theorems for positive operators

by

RYOTARO SATO (Okayama)

Abstract. Let (X, \mathcal{F}, μ) be a σ -finite measure space and T a positive linear contraction on $L_1(\mu)$. By approximation T can be extended to the space of all nonnegative measurable functions. Suppose V is a positive measurable function and $0 < e \in L_1(\mu)$. Assuming that T is conservative, the following is proved: If $1 < p < \infty$ then $\lim_n (\sum_{i=0}^n T^i f) / (\sum_{i=0}^n T^i e)$ exists and is finite almost everywhere for all $0 \leq f \in L_p(Vd\mu)$ if and only if $\sup_{n \geq 0} (\sum_{i=0}^n T^i V^{1-p'}) / (\sum_{i=0}^n T^i e) < \infty$ almost everywhere, where $1/p + 1/p' = 1$. This generalizes a recent result of Martin-Reyes and de la Torre concerning measure preserving transformations on a finite measure space. Related results are also proved.

1. Introduction. Let (X, \mathcal{F}, μ) be a σ -finite measure space. Recently, Martin-Reyes and de la Torre ([8]–[10]) considered operators T , acting on measurable functions and having the form

$$Tf(x) = f(\tau x)$$

where $\tau: X \rightarrow X$ is a measure preserving transformation, and studied the problem of identifying those positive and measurable functions V such that for each $f \in L_p(Vd\mu)$, the limit $\lim_n (\sum_{i=0}^n T^i f) / (\sum_{i=0}^n T^i e)$ exists and is finite a.e. on X , where $0 < e \in L_1(\mu)$ is fixed arbitrarily. Under the hypothesis that $\mu(X) < \infty$, Martin-Reyes and de la Torre succeeded in characterizing such functions V ; they proved, with $e \equiv 1$, that (i) if $1 < p < \infty$ then such functions V are those which satisfy

$$(1) \quad \sup_{n \geq 0} \left(\sum_{i=0}^n T^i V^{1-p'} \right) / \left(\sum_{i=0}^n T^i e \right) < \infty \quad \text{a.e. on } X$$

where $1/p + 1/p' = 1$, (ii) if $p = 1$ then such functions V are those which satisfy

$$(2) \quad \inf_{n \geq 0} V(\tau^n x) > 0 \quad \text{a.e. on } X.$$

Then the author [13] considered (more general) operators T of the form

$$Tf(x) = h(x)f(\tau x)$$