A passage from *Logic from a Rhetorical Point of View*
by Witold Marciszewski
de Gruyter, Berlin 1994, pp. 10-12. Chapter One, Section 2.4.

Pascal's merit for our understanding of how does the human mind work consists in his famous distinction between *esprit de géometrie* and *esprit de finesse*. Here are Pascal's own words on the *esprit de finesse* as characteristic of practical men being opposed to mathematicians.[1]

> The reason that mathematicians are not practical is that they do not see what is before them, and that, accustomed to the precise and distinct statements of mathematics and not reasoning till they have well examined and arranged their premises, they are lost in practical life wherein the premises do not admit of such arrangement, being scarcely seen, indeed they are felt rather than seen, and there is great difficulty in causing them to be felt by those who do not of themselves perceive them. They are so nice and so numerous, that a very delicate and very clear sense is needed to apprehend them, and to judge rightly and justly when they are apprehended, without a rule being able to demonstrate them in an orderly way as in mathematics; because the premises are not before us in the same way, and because it would be an infinite matter to undertake. We must see them at once, at one glance, and not by a process of reasoning, at least up to a certain degree.

In another passage (p. 311), Pascal uses the phrase *penetrative intellect* to name the same faculty.

> Some are able to draw conclusions well from a few premises, and this shows a penetrative intellect. Others draw conclusions well where there are many premises. For instance, the first easily understand the laws of hydrostatics, where premises are few, but the conclusions so nice, that only greatest penetration can reach them. And those persons would perhaps not necessarily be great mathematicians, because mathematics embrace a great number of premises, and perhaps a mind may be so formed that it searches with ease a few premises to the bottom, yet cannot at all comprehend those matters in which there are many premises.
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> These are two kinds of mind, the one able to penetrate vigorously and deeply into the conclusions of certain premises, and these are minds true and just. The other able to comprehend a great number of premises without confusion, and these are the minds for mathematics. The one kind has force and exactness, the other capacity. Now the one quality can exist without the other, a mind may be vigorous and narrow, or it may have great range and no strength.

After more than three centuries, these observations display new vitality — owing to our familiarity with computers, and to our knowledge, even if modest, of the functioning of the brain. Certainly it is natural for a computer to imitate mathematical minds due to the enormous memory capacities being "able to comprehend a great number of premises without confusion". It is why computers are good at deducing data from explicitly enumerated, even if gigantic, sets of premises. As for the brain mechanism underlaying the penetrative mind, it may be considered as approaching this model. An advantage of the brain over the computer consists in an astronomical number of connections between neural cells so that innumerable data from many centres and levels can be combined and synthetized at to yield a conclusion. The conclusion follows, so to say, from premises written nowhere, for no unit in itself records a whole premise, it may result from a combination and interplay of unimaginably numerous partial data converging towards a whole.

Such a model accounts for the feature which Pascal perceived as the ability to deal with enormous complexity of details; hence the name 'finesse' to suggest that minuteness, and the adjective 'penetrative' to suggest the necessity of penetrating deep layers of a vast network. Obviously, a great part of that process must occur at the subconscious level, so that often a penetrative mind perceives only the result without being able to account for either the premises or the ways of conceptualizing and reasoning; this lack of awareness of our own mental processes is the price to be paid for their enormous efficiency.

In spite of the denied access to that immense fabric of mental-neural activity, we shall try to find out a factor at the conscious level owing to which the penetrative esprit could significantly improve its performances. The penetrative mind is defined as one suitably endowed with what I suggest we call 'conceptual potential' as a principal constituent of intelligence. [2]

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[1] *The Thoughts of Blaise Pascal* transl. C. Kegan Paul, London 1895, George Bell & Sons, see section 'Various Thoughts', p. 310. The phrase itself does not appear in the quoted text; it appears earlier in a passage which is continued by the one here cited.

[2] Such a cognitive foundation requires an adequate terminology. To find a suitable English counterpart for the Pascalian *esprit de finesse* without coining new and unavoidably artificial terms, I suggest the word 'acumen' as a short and natural translation. In its original Latin meaning it denotes a top in acute form, and later, by extension, high intelligence, acuteness, wit.