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## The Role of Vital Forces in Jędrzej Sniadecki's Theory of Organic Beings

During the latter half of the 18th and the beginning of the 19th century, major transformations took place in the perception of the natural world and in the definition of matter. From the late 1680's to the 1740's, mechanical natural philosophy was dominant, aided by the increasing acceptance and influence of Newtonian science. Natural phenomena were explained through the methods and assumptions of formal mathematical reasoning. Knowledge of the natural world was organized around a few basic principles or all-encompassing laws like mathematics or the physical sciences. There was no essential difference between living and nonliving objects.

By the mid-18th century, this mechanistic worldview was questioned by natural philosophers who saw in nature a great variety and complexity, a continuous movement, self-organization, constant transformations, sympathetic interactions, and change over time. Nature had a history. They saw a living world and living matter whose existence mechanistic principles and laws could not account for. Their interests centered on the fields of natural history, chemistry, medicine, the life sciences and their interconnections. These Enlightenment-era thinkers are called vitalists.

Vitalists clearly and sharply differentiated between living and nonliving matter. They saw living matter as containing an immanent and immaterial principle of self-organization or self-movement whose sources lay in active powers, which resided in matter itself. They "vitalized the world" with non-mechanistic vital forces, vital principles, sympathies, formative drives, and elective affinities. These vital forces or principles were the differential features that distinguished the living from the non-living.

In this paper I will examine how Jędrzej Sniadecki defined and classified vital forces and the role they played in his major scientific work *The Theory of Organic Beings*.

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