Our eyes and ears nourish our sense of existence. They are open windows on the world and inspire our brains and our mind. Through these windows thoughts between people are exchanged, questions raised by the world around us are posed, natural cycles evoking time are revealed. Technical sciences such as ultrasonics are extensions of our primary senses and deepen questions and answers, problems and solutions and therefore our sense of existence and our ability to understand, to invent, to fabricate and to check quality and safety. Many topics in ultrasonics involve solutions that can only be obtained through long journeys along different topics, different phenomena and different partial problems. One of such topics is the interaction of ultrasound with periodic structures. Periodic structures are used in many applications in science and engineering, such as phononic crystals, nano-materials, reinforced materials, composites, pyramids, theatres, and noise barriers.

A journey will be presented necessary to understand the interaction of sound with a specific kind of periodic structure, namely a corrugated material. The journey will bring us to guided waves in plates and on surfaces, to simulation models, to anisotropic media, to Bragg scattering, to nonlinear acoustic effects and will even point at connections between modern science and ancient Hellenistic and Mayan architecture. The journey will challenge our sense of time, our sense of scale and will allow us to appreciate the current state of the art in a number of areas in ultrasonic nondestructive evaluation of materials.