

## Interaction

An interaction is a reciprocal action (retroaction) between two or more actors or places in a system. All exchanges (of matter, persons, information...), for example at individual level between producer and customer, between partners, or at aggregate level between cities or regions (these are the spatial interactions), are interactions as far as they generate interdependent changes in behaviours or in structures. The term was introduced into a theory of movement by E.L.Ullman, who set as necessary condition for spatial interaction complementariness (compatibility between supply and demand) between places that exchange and transportability of the product (technical possibility, existence of infrastructure, affordable cost), as well as consideration of interposed opportunities or other closer places able to supply or to receive the same product. Spatial interactions may usefully be analysed by means of the gravity model (which more generally belongs to the category of spatial interaction models) if they are strongly constrained by distance.

A spatial interaction model is used in order to estimate or predict importance of exchanges between pairs of places. The simplest model is the so-called gravity model, by analogy of formulation with the law of universal gravity, but other models integrating more complex hypotheses have been elaborated, like Wilson's model or Stouffer's model of interposed opportunities.

## Bibliographie

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