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A Role of "Connections" for Sustainable Longer-Lasting Artifacts and Relationship with Users

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Recent studies demonstrate that environmental consciousness has garnered increasing interest in design practices1. Currently, a growing idea in the research community is that sustainable design must be capable of changing users' behavior2 rather than only products and materials properties. Even though several strategies have been developed in last years,3 the challenge of sustainable development needs to investigate a new holistic design-driven approach.

The research highlights paths for designers to foster and support users' involvement in waste reduction through the promotion of "R" strategies.4 In particular, active involvement of users is considered as a way to postpone the end of life of products by reusing and repairing them. The following paper investigates the potential contribution to sustainability given by the valorisation of the environmental benefits of reuse practices. In particular, we focus on the role of joint systems, called "connections", as actuators of relationship between artefacts and users. By understanding the evolution of artifacts through the lens of connections, we can then begin to look at objects as reusable structures, able to fit a variety of changing contexts and needs. In this view, the notion of "reuse" is reconstructed as innovative design practice with several productive, social and design advantages.

To demonstrate our theory, we firstly classify four different types of user/object interactions, called "communicative scenarios". Each communicative scenario can: potentiate affordances, activate a communication path from the object, deny communication and create a "coached" connection. To clarify how a designer can open a specific communicative scenario, we use the strategic value of connections. Thus, we present a focus on 150 significant products selected according to their ability to: repurpose objects, minimize material consumption, get user involved and suggest interesting design ideas. By looking at the new function of the object envisaged by designers, each product is classified with respect to the communicative scenario opened and the connections that made it possible.

The research further contributes to the "design for reuse" concept by gathering 22 joint systems with high potential for interaction in each scenario. A map is produced to support designers in the renovated approach for longer-lasting products and relationships through connections. These tools allow designers to predict users' reaction and to handle it for product reuse.