

A Concept Diagram:

## The Role of Design and Designers in Socio-Technical Transitions

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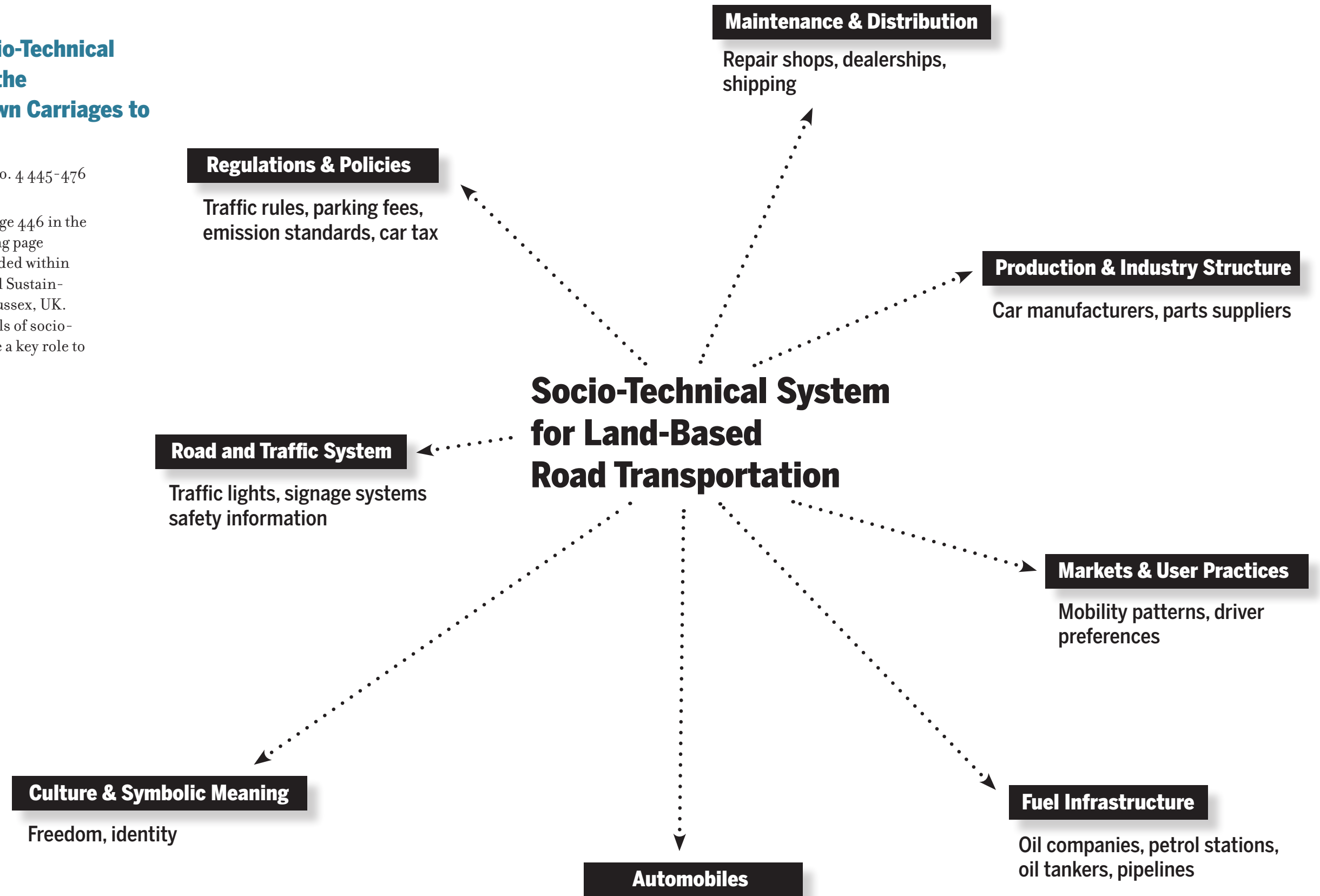
Based upon F.W. Geels, 2005:

### “The Dynamics of Transitions in Socio-Technical Systems: A Multi-Level Analysis of the Transition Pathway from Horse-drawn Carriages to Automobiles (1860-1930)”

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The diagram at right is based upon Geels, figure 1, page 446 in the above citation. The diagram and table on the following page shows how design and its sub-disciplines are embedded within socio-technical systems. Presented at the 6th Annual Sustainability Transitions Conference (IST) August, 2015, Sussex, UK. The authors argue that design is found within all levels of socio-technical systems and that design and designers have a key role to play in the design of sustainability transitions.

(Not for publication).



SYSTEM CATEGORIES	DESIGNED ARTIFACTS/PROCESSES EMBEDDED WITHIN THE SYSTEM	DESIGN DISCIPLINES INVOLVED
<b>Regulations and Policies</b> (e.g. traffic rules, parking fees, emission standards, car tax)	Parking meters; parking ticket machines; user interfaces for ticket machines; policy for emissions; process for checking emissions; emissions testing machines; interface for testing machines; parking regulations; driving regulations; tax policy for automobiles; policy for insuring automobiles; communication materials for all of the above in print, digital and broadcast media;	<ul style="list-style-type: none"> <li>• Policy design</li> <li>• Experience design</li> <li>• Interaction/interface design</li> <li>• Product design</li> <li>• Environments design</li> <li>• Communication design</li> <li>• Information design</li> <li>• Service design</li> <li>• User research</li> </ul>
<b>Road &amp; Traffic System</b> (e.g. lights, signs etc.)	Network of motorways; guard rails; rest stops; waste containers; signage systems; signs; sign symbols; sign typography; traffic lights; traffic light interfaces and operating systems; safety lights; mobile hazard lights; safety fences & bollards; security cameras; computer interfaces for monitoring computer cameras; highway markers & symbols (crosswalks, center lines etc.); highway meridians; freeway entrance/exits/roundabouts; local, regional, national maps of highways and roads in print and digital media;	<ul style="list-style-type: none"> <li>• Policy design</li> <li>• Urban design</li> <li>• Interaction/interface design</li> <li>• Product design</li> <li>• Wayfinding &amp; signage design</li> <li>• Communication design</li> <li>• Service design</li> <li>• Letterfrom design</li> <li>• Information design</li> <li>• User research</li> </ul>
<b>Culture &amp; Symbolic Meaning</b> (e.g. freedom, identity)	Brand narrative & strategy; brand identity system; advertising and marketing in print, product, digital and broadcast media; logo & symbols; branded clothing & accessories; branded events; retail and exhibition displays; brand guidelines;	<ul style="list-style-type: none"> <li>• Brand strategy &amp; identity design</li> <li>• Experience design</li> <li>• Interaction/interface design</li> <li>• Product design</li> <li>• Communication design</li> <li>• Fashion design</li> <li>• Advertising &amp; marketing</li> <li>• Exhibition design</li> </ul>
<b>Fuel Infrastructure</b> (e.g. oil companies)	Petrol stations (interior/exterior); petrol pumps; user interface for fuel pumps; signage system for petrol station; brand identity for signage & products; credit card/payment system; tanker trucks; delivery system for fuel at point of sale; petrol station experience; oil tanker trucks; oil storage systems; refinery stations & equipment; oil tanker ships; oil pipelines; identity/advertising/marketing for oil companies in print/digital/broadcaset media;	<ul style="list-style-type: none"> <li>• Environments design</li> <li>• Interior design</li> <li>• Interaction/interface design</li> <li>• Product design</li> <li>• Wayfinding &amp; signage design</li> <li>• Communication design</li> <li>• Service &amp; experience design</li> <li>• Brand design</li> <li>• Transport design</li> <li>• User research</li> </ul>
<b>Markets &amp; User Practices</b> (e.g. mobility patterns, driver preferences)	Targeted advertising and marketing in print, digital, broadcast and point of sale media; research reports and graphic representations; surveys and other methods for obtaining user data and preferences;	<ul style="list-style-type: none"> <li>• User/design research</li> <li>• Communication design</li> <li>• Information design</li> <li>• Service design</li> <li>• Experience design</li> <li>• Brand &amp; retail design</li> <li>• Advertising &amp; marketing</li> </ul>
<b>Production System &amp; Industry Structure</b> (e.g. car manufacturers, suppliers, distributors)	Automobiles; factories, assembly lines/process; materials; parts; automotive software for design; owners & parts manuals; software for inventory and interaction with sub-contractors/suppliers; signage & wayfinding; billing systems in print/digital; employee benefits/retirement plans w/communications & interfaces; internal corporate strategies/communications/policies;	<ul style="list-style-type: none"> <li>• Policy design</li> <li>• Experience design</li> <li>• Interaction/interface design</li> <li>• Product/automotive design</li> <li>• Environments design</li> <li>• Communication design</li> <li>• Information design</li> <li>• Service design</li> <li>• User research</li> <li>• Design strategy</li> </ul>
<b>Maintenance &amp; Distribution Network</b> (e.g. repair shops, dealers)	Dealerships (exterior/interior); signage & wayfinding; brand presence in digital, print, broadcast, retail media; repair/garage exterior and interiors; automotive tools and testing devices; transport vehicles for distribution (land, air, sea); advertising/brand/marketing for dealers, automotive repair businesses and parts distributors in print/digital/broadcast and point of sale media;	<ul style="list-style-type: none"> <li>• Architecture &amp; interior design</li> <li>• Advertising/marketing retail design</li> <li>• Brand strategy &amp; design</li> <li>• Transport design</li> <li>• Product design</li> <li>• Communication design</li> <li>• Service design</li> <li>• Information design</li> <li>• User research</li> </ul>