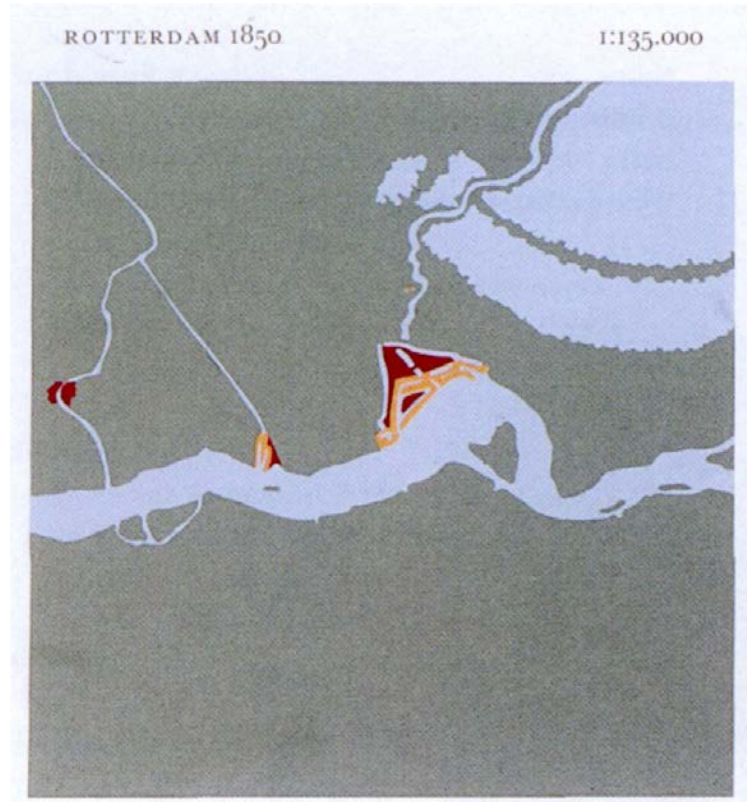


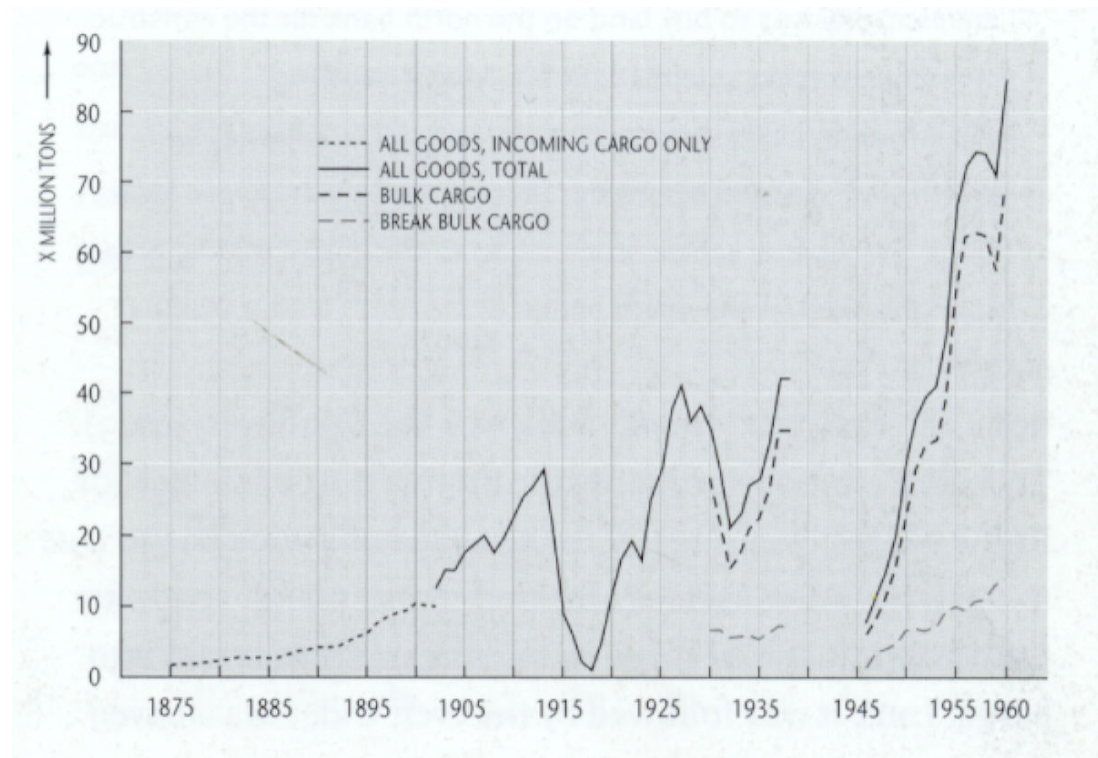
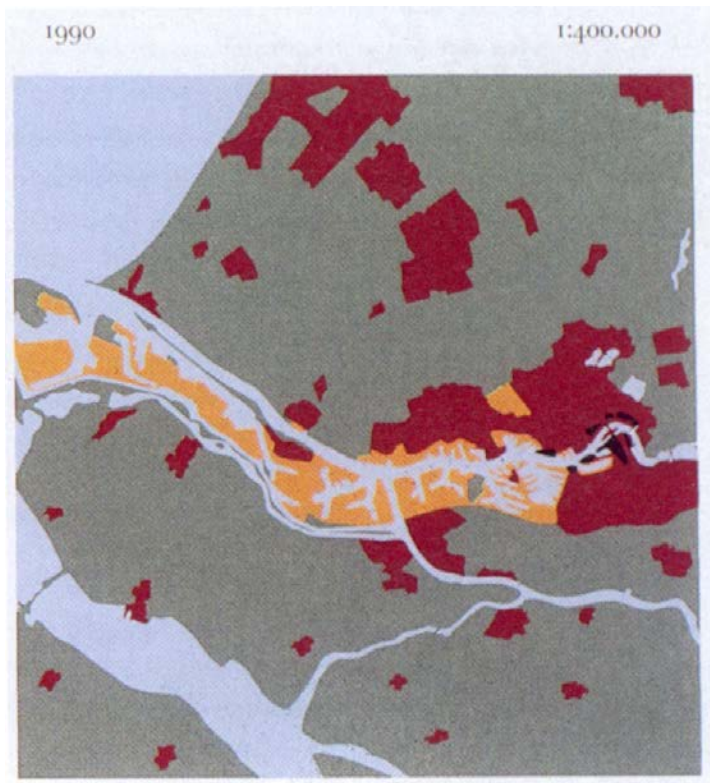
Deep Transitions

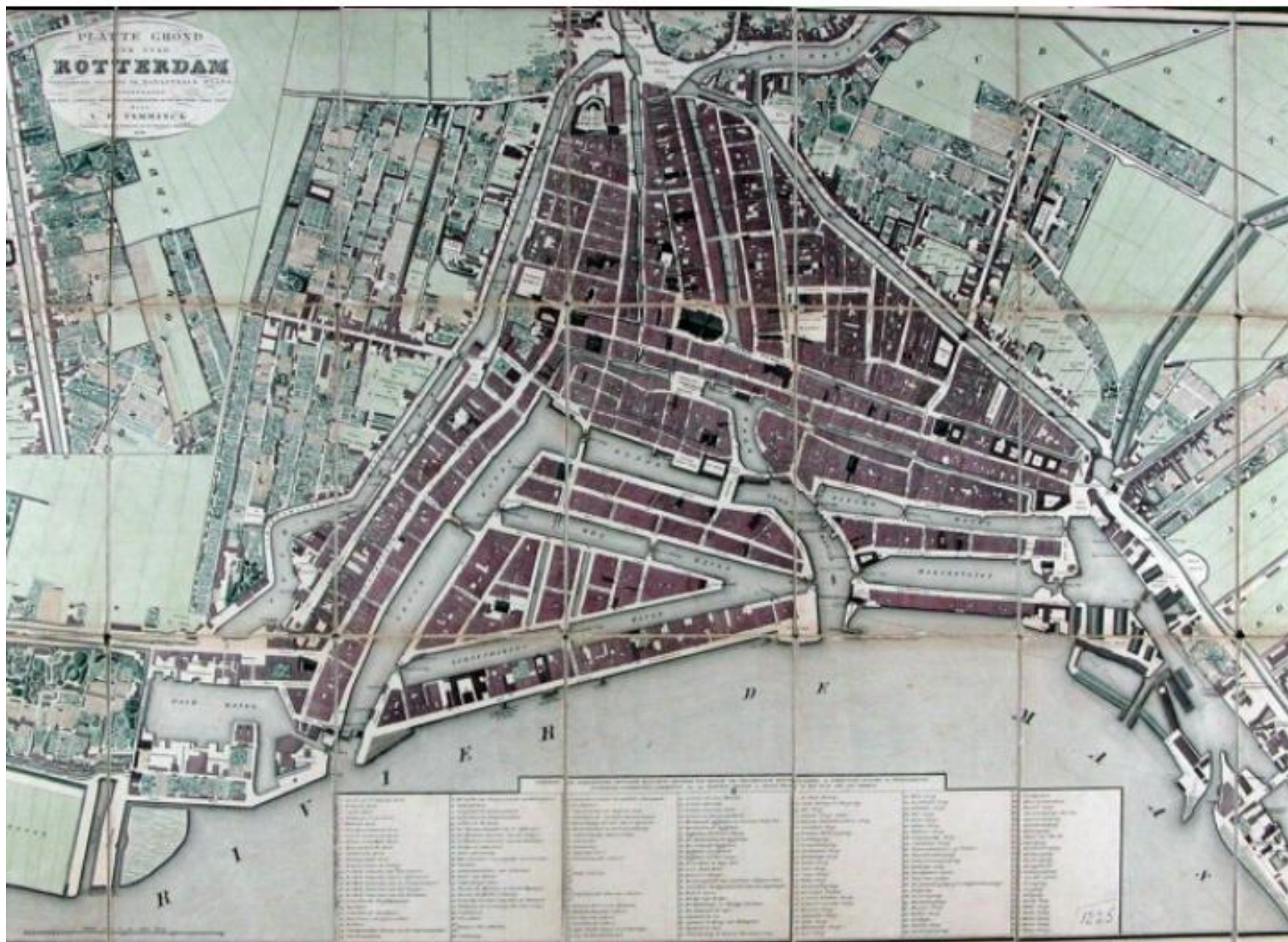
Johan Schot

Eu-SPRI Winterschool
Innovation Policy for Transformative Change
16-20 January, 2017





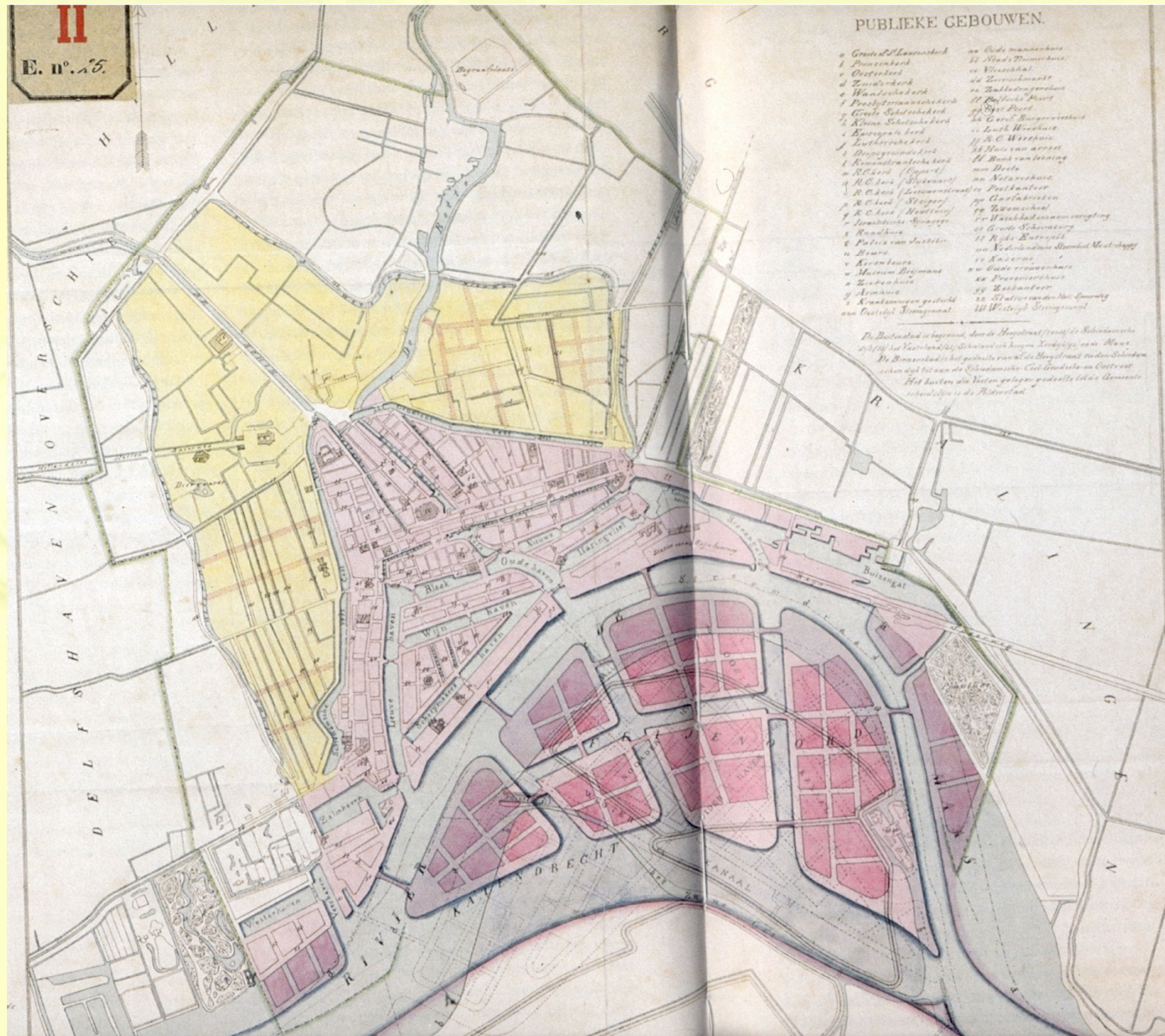






- | | |
|-------------------------------|-----------------------|
| a Grote d'Elzenkerck | an Oude mannekerck |
| b Bovenkerck | 11 Nieuw d'Elzenkerck |
| c Oudekerck | 12 Nieuwkerck |
| d Zandkerck | 13 Nieuwkerck |
| e Waaskerck | 14 Nieuwkerck |
| f Poesjterkerck | 15 Nieuwkerck |
| g Grote Schiedamskerck | 16 Nieuwkerck |
| h Kleine Schiedamskerck | 17 Nieuwkerck |
| i Bovenkerck | 18 Nieuwkerck |
| j Lutherkerck | 19 Nieuwkerck |
| k Drogenkerck | 20 Nieuwkerck |
| l Kerkhofkerck | 21 Nieuwkerck |
| m Kerkhofkerck | 22 Nieuwkerck |
| n R.C. kerck (St. Janskerck) | 23 Nieuwkerck |
| o R.C. kerck (St. Janskerck) | 24 Nieuwkerck |
| p R.C. kerck (St. Janskerck) | 25 Nieuwkerck |
| q R.C. kerck (St. Janskerck) | 26 Nieuwkerck |
| r R.C. kerck (St. Janskerck) | 27 Nieuwkerck |
| s R.C. kerck (St. Janskerck) | 28 Nieuwkerck |
| t R.C. kerck (St. Janskerck) | 29 Nieuwkerck |
| u R.C. kerck (St. Janskerck) | 30 Nieuwkerck |
| v R.C. kerck (St. Janskerck) | 31 Nieuwkerck |
| w R.C. kerck (St. Janskerck) | 32 Nieuwkerck |
| x R.C. kerck (St. Janskerck) | 33 Nieuwkerck |
| y R.C. kerck (St. Janskerck) | 34 Nieuwkerck |
| z R.C. kerck (St. Janskerck) | 35 Nieuwkerck |
| aa R.C. kerck (St. Janskerck) | 36 Nieuwkerck |
| ab R.C. kerck (St. Janskerck) | 37 Nieuwkerck |
| ac R.C. kerck (St. Janskerck) | 38 Nieuwkerck |
| ad R.C. kerck (St. Janskerck) | 39 Nieuwkerck |
| ae R.C. kerck (St. Janskerck) | 40 Nieuwkerck |
| af R.C. kerck (St. Janskerck) | 41 Nieuwkerck |
| ag R.C. kerck (St. Janskerck) | 42 Nieuwkerck |
| ah R.C. kerck (St. Janskerck) | 43 Nieuwkerck |
| ai R.C. kerck (St. Janskerck) | 44 Nieuwkerck |
| aj R.C. kerck (St. Janskerck) | 45 Nieuwkerck |
| ak R.C. kerck (St. Janskerck) | 46 Nieuwkerck |
| al R.C. kerck (St. Janskerck) | 47 Nieuwkerck |
| am R.C. kerck (St. Janskerck) | 48 Nieuwkerck |
| an R.C. kerck (St. Janskerck) | 49 Nieuwkerck |
| ao R.C. kerck (St. Janskerck) | 50 Nieuwkerck |
| ap R.C. kerck (St. Janskerck) | 51 Nieuwkerck |
| aq R.C. kerck (St. Janskerck) | 52 Nieuwkerck |
| ar R.C. kerck (St. Janskerck) | 53 Nieuwkerck |
| as R.C. kerck (St. Janskerck) | 54 Nieuwkerck |
| at R.C. kerck (St. Janskerck) | 55 Nieuwkerck |
| au R.C. kerck (St. Janskerck) | 56 Nieuwkerck |
| av R.C. kerck (St. Janskerck) | 57 Nieuwkerck |
| aw R.C. kerck (St. Janskerck) | 58 Nieuwkerck |
| ax R.C. kerck (St. Janskerck) | 59 Nieuwkerck |
| ay R.C. kerck (St. Janskerck) | 60 Nieuwkerck |
| az R.C. kerck (St. Janskerck) | 61 Nieuwkerck |
| ba R.C. kerck (St. Janskerck) | 62 Nieuwkerck |
| bb R.C. kerck (St. Janskerck) | 63 Nieuwkerck |
| bc R.C. kerck (St. Janskerck) | 64 Nieuwkerck |
| bd R.C. kerck (St. Janskerck) | 65 Nieuwkerck |
| be R.C. kerck (St. Janskerck) | 66 Nieuwkerck |
| bf R.C. kerck (St. Janskerck) | 67 Nieuwkerck |
| bg R.C. kerck (St. Janskerck) | 68 Nieuwkerck |
| bh R.C. kerck (St. Janskerck) | 69 Nieuwkerck |
| bi R.C. kerck (St. Janskerck) | 70 Nieuwkerck |
| bj R.C. kerck (St. Janskerck) | 71 Nieuwkerck |
| bk R.C. kerck (St. Janskerck) | 72 Nieuwkerck |
| bl R.C. kerck (St. Janskerck) | 73 Nieuwkerck |
| bm R.C. kerck (St. Janskerck) | 74 Nieuwkerck |
| bn R.C. kerck (St. Janskerck) | 75 Nieuwkerck |
| bo R.C. kerck (St. Janskerck) | 76 Nieuwkerck |
| bp R.C. kerck (St. Janskerck) | 77 Nieuwkerck |
| bq R.C. kerck (St. Janskerck) | 78 Nieuwkerck |
| br R.C. kerck (St. Janskerck) | 79 Nieuwkerck |
| bs R.C. kerck (St. Janskerck) | 80 Nieuwkerck |
| bt R.C. kerck (St. Janskerck) | 81 Nieuwkerck |
| bu R.C. kerck (St. Janskerck) | 82 Nieuwkerck |
| bv R.C. kerck (St. Janskerck) | 83 Nieuwkerck |
| bw R.C. kerck (St. Janskerck) | 84 Nieuwkerck |
| bx R.C. kerck (St. Janskerck) | 85 Nieuwkerck |
| by R.C. kerck (St. Janskerck) | 86 Nieuwkerck |
| bz R.C. kerck (St. Janskerck) | 87 Nieuwkerck |
| ca R.C. kerck (St. Janskerck) | 88 Nieuwkerck |
| cb R.C. kerck (St. Janskerck) | 89 Nieuwkerck |
| cc R.C. kerck (St. Janskerck) | 90 Nieuwkerck |
| cd R.C. kerck (St. Janskerck) | 91 Nieuwkerck |
| ce R.C. kerck (St. Janskerck) | 92 Nieuwkerck |
| cd R.C. kerck (St. Janskerck) | 93 Nieuwkerck |
| ce R.C. kerck (St. Janskerck) | 94 Nieuwkerck |
| cf R.C. kerck (St. Janskerck) | 95 Nieuwkerck |
| cg R.C. kerck (St. Janskerck) | 96 Nieuwkerck |
| ch R.C. kerck (St. Janskerck) | 97 Nieuwkerck |
| ci R.C. kerck (St. Janskerck) | 98 Nieuwkerck |
| cj R.C. kerck (St. Janskerck) | 99 Nieuwkerck |
| ck R.C. kerck (St. Janskerck) | 100 Nieuwkerck |

De Buitendijk is begrensd, door de Buitendijk (tenzij de Schiedamsche
dijk) tot de Buitendijk (tenzij de Schiedamsche dijk) van de Buitendijk.
De Buitendijk is het gedeelte van de Buitendijk, tenzij de Schiedamsche
dijk, dat ligt aan de Schiedamsche dijk, tenzij de Buitendijk.
Het laken die Buitendijk, tenzij de Schiedamsche dijk, tenzij de Buitendijk.
schiedamsche dijk, tenzij de Buitendijk.

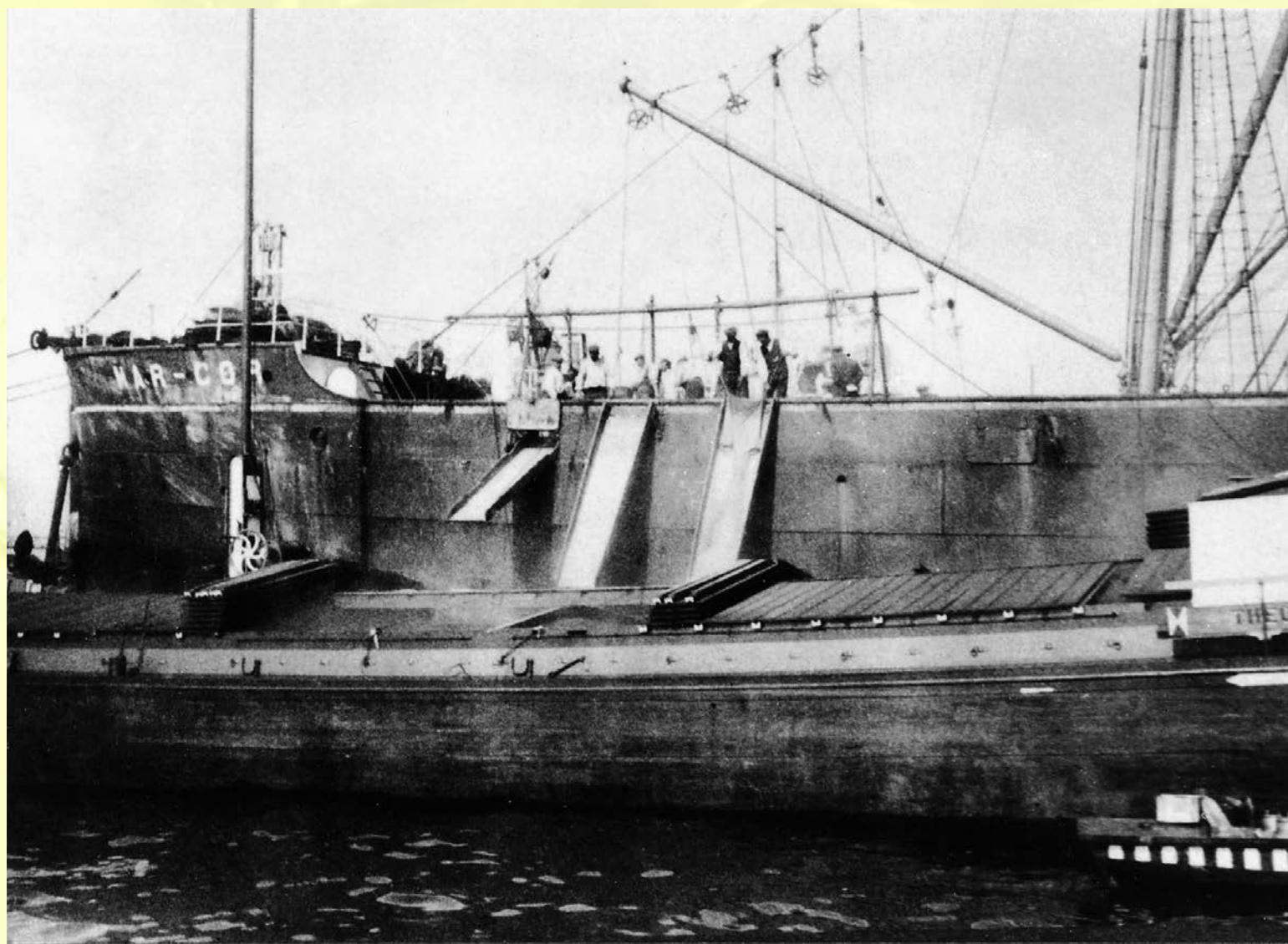


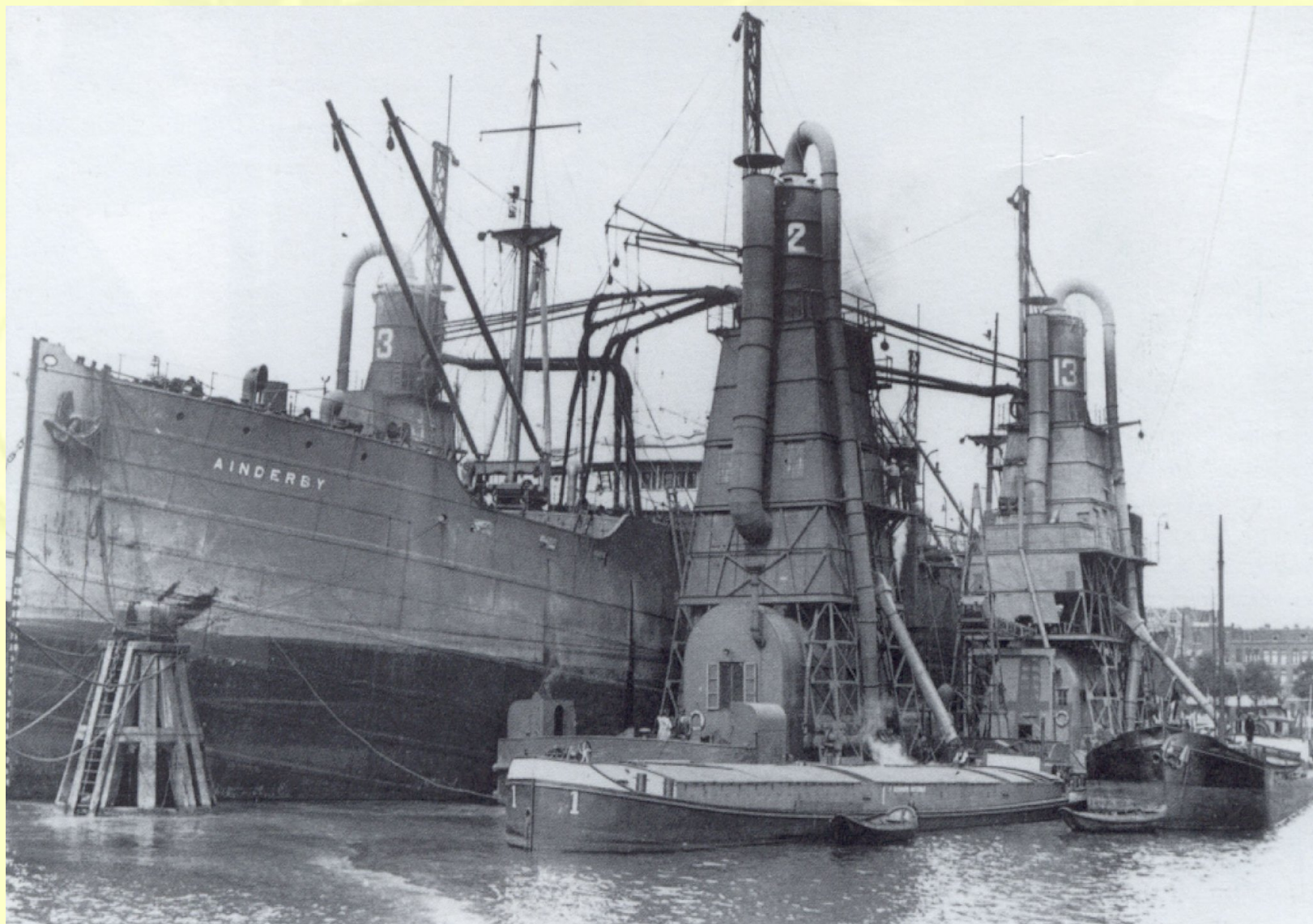
Schaal 1: 10000
Uitgave van
P. M. BAZENDIJK.
1913

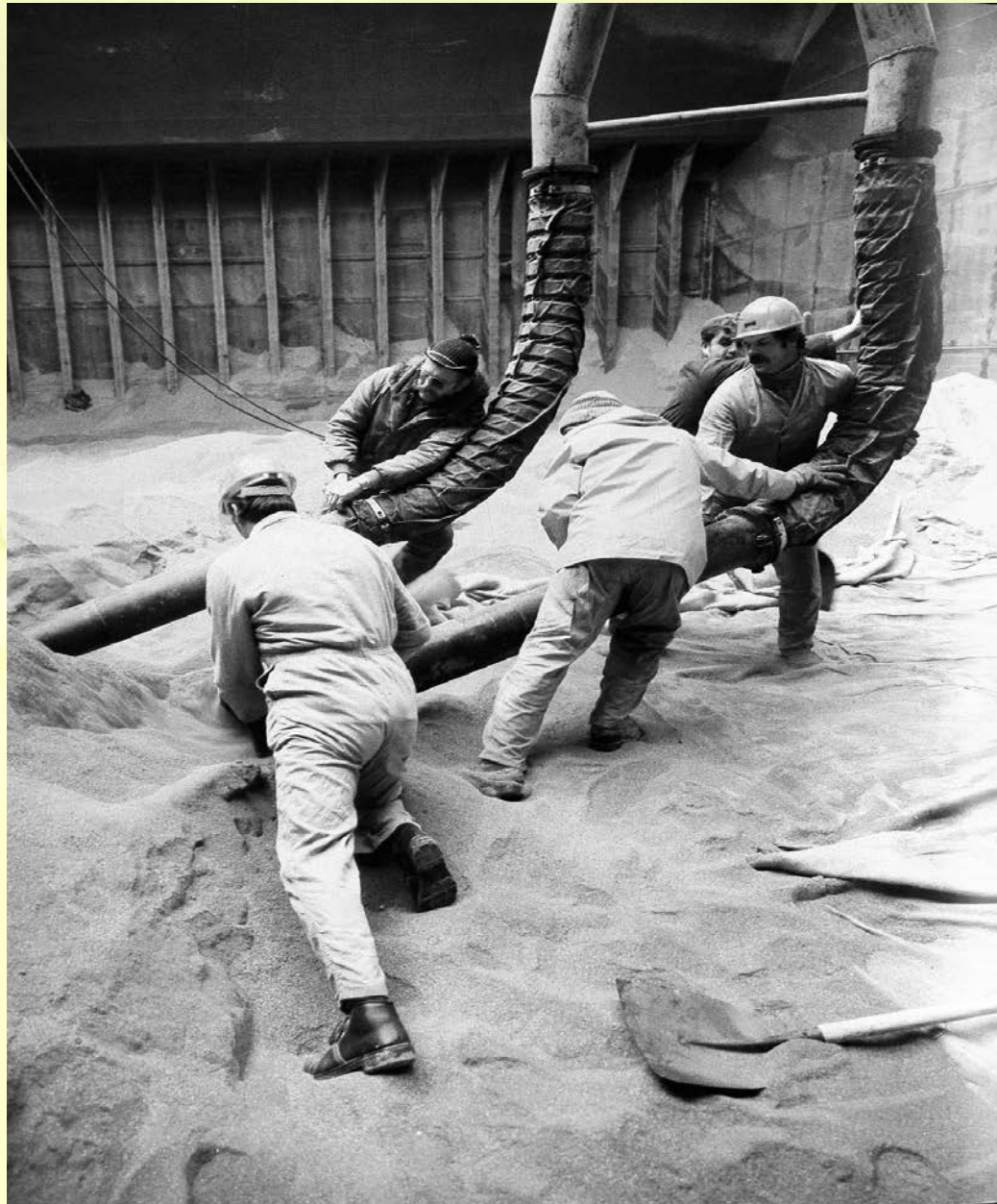












LOSSE NUMMERS 15 CENT

6^e JAARG. N^o 19 — 27 JULI 1928

GROOT ROTTERDAM

REDACTIE EN ADMINISTRATIE: STATIONS

ROTTERDAM — TELEFOON INTERC. No. 540



HOE ROTTERDAM ER BINNEN ENKELE JAREN UIT ZAL ZIEN

Elk jaar worden de gebouwen in de Rottestad grootscher en hooger. Wanneer straks het Driehavenplan geheel gereed is, zullen we het nog beleven, dat de stoute wolkenkrabbers van Rotterdamse firma's met een overblijfsel aan de oevers van de Maas oerrijzen.

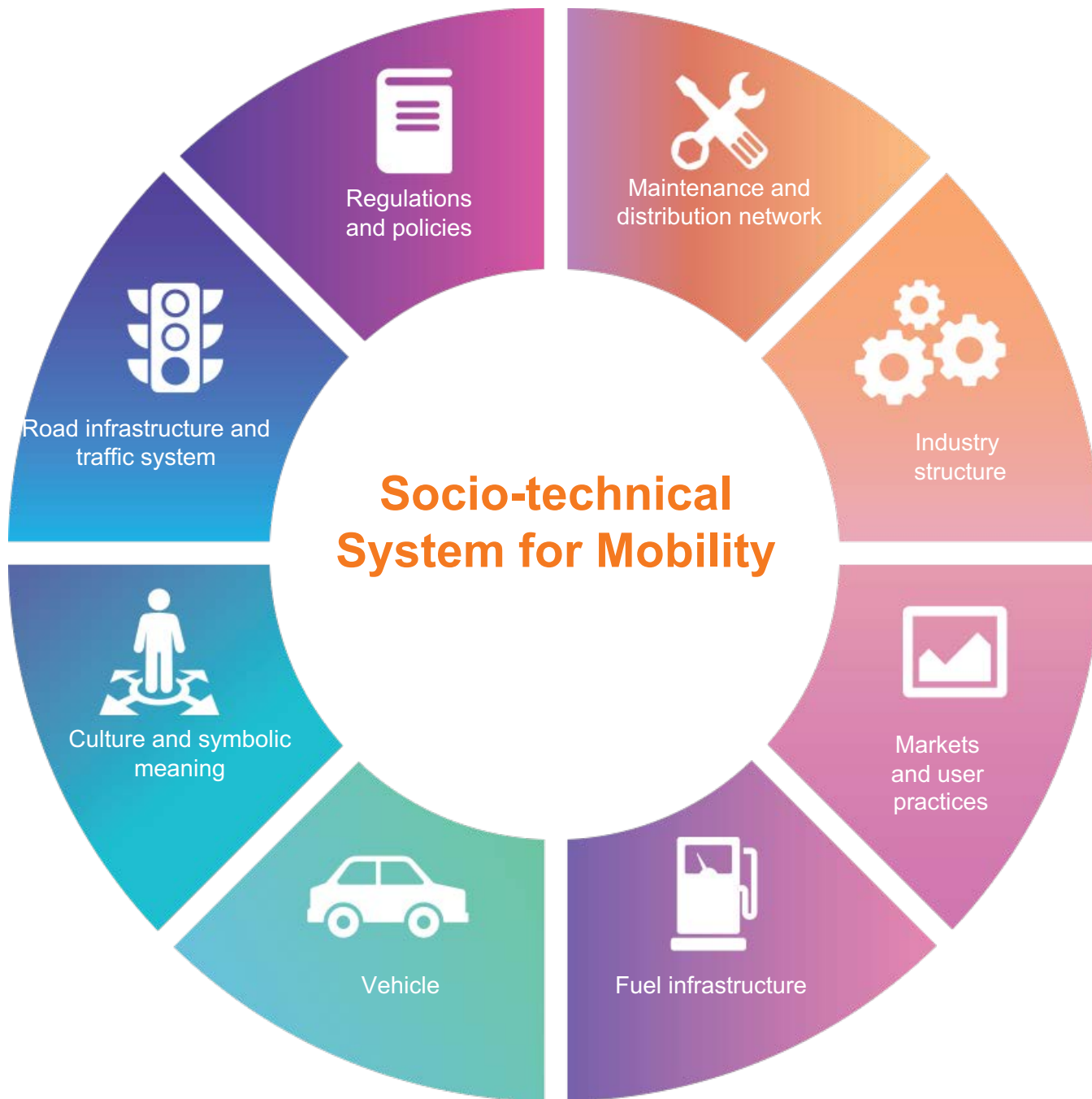
4. Deep Transition



Transitions in multiple
sociotechnical
systems/regimes

...Moving in a
shared
direction,
through a series
of waves/surges

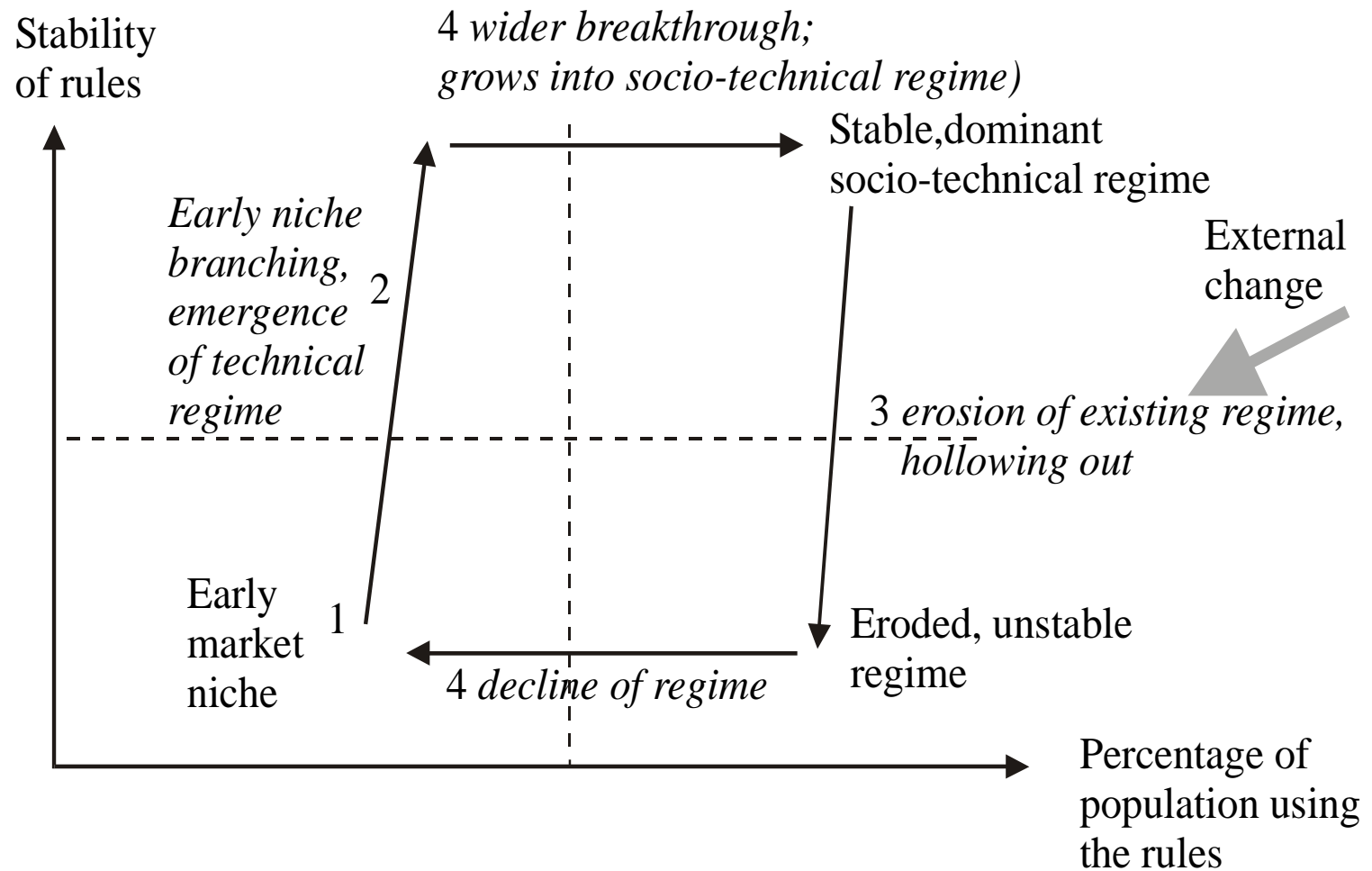
Deep Transitions: Emergence, Acceleration, Stabilization and Directionality
Johan Schot, Laur Kanger 2016. Available at www.johanschot.com



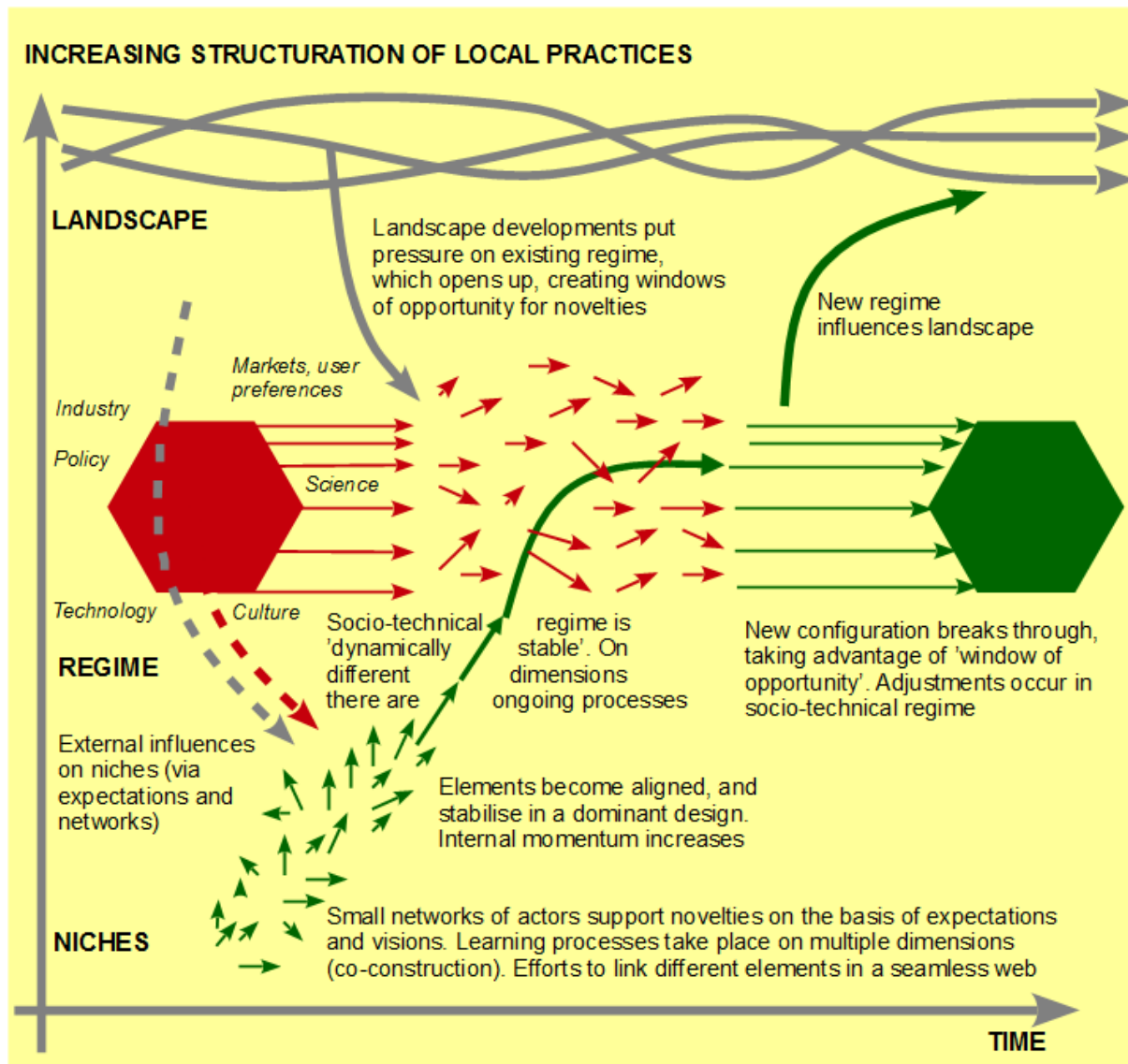


Definition of a socio-technical regime

A socio-technical regime consists of a distinct set of stable rules, used by actors to guide socio-technical design and use. This rule-set is embodied in shared engineering search heuristics, ways of defining problems, user preferences, policies, expectations, product characteristics, skills and standards.



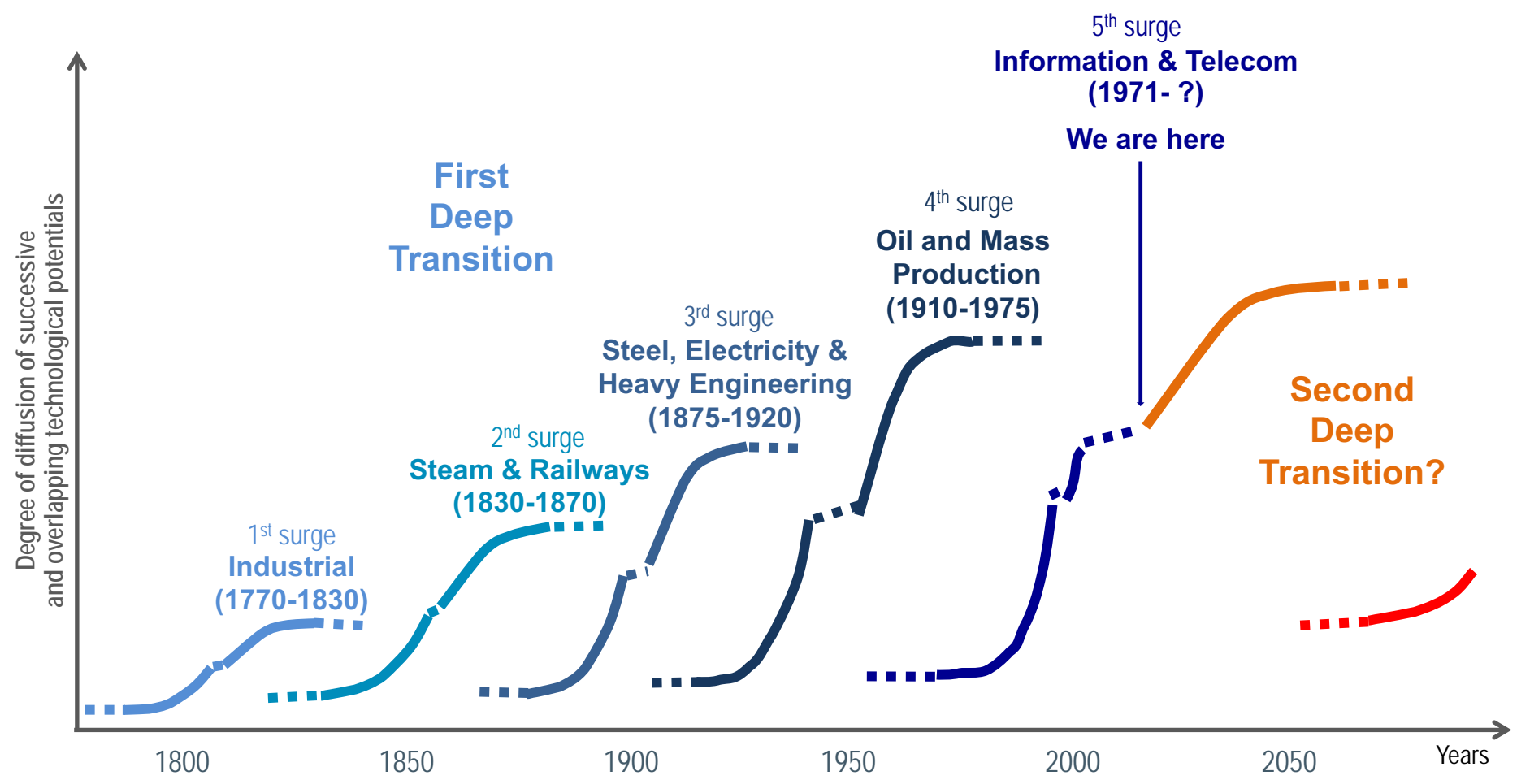
Representation of a transition of a single system



Geels, 2002, Geels and Schot, 2007, Schot and Kanger, 2016

TEP is...a best practice model made up of a set of all pervasive generic technological and organizational principles, which represents the most effective way of applying a particular technological revolution and using it for modernizing and rejuvenating the whole of the economy. When generally adopted, these principles become the common-sense basis for organizing any activity and for structuring any institution.” (Perez, 2002: 17)

First and Second Deep Transitions



Source: Adapted from C. Perez (2002)

What is a Deep Transition?

- Deep Transition is a shift in a shared direction (1) of several socio-technical systems (2) reorganizing the entire economy and society (3) (eventually on a global scale) (4).
- This shared direction could be referred to as a techno-economic paradigm (TEP) (Perez, 2002);
- A TEP is a meta-sociotechnical regime, and provides coordination across a range of sociotechnical regimes.

How does a Deep Transition emerge, accelerate, stabilize and get direction?

- First proposition: early TEPs seeds and ideas emerge in several systems, and are subject to MLP dynamics and struggles:
 - Beginning of TEP is “small in fact and big in promise” (Perez, 2002: 36);
 - It is a distributed process and starts early on in the installation period.
 - There is a competition between various TEPs

How does a Deep Transition emerge, accelerate, stabilize and get direction?

- Second proposition: TEPs develop aggregation and mobilising power through multi-regime dynamics
 - This process of sharing and imposing TEPs between systems only happens later in the installation period
 - Two main carriers for multi-regime dynamics are functional (global value chains) and structural couplings (shared use of infrastructures, actors, policies) (Konrad et al, 2008)
 - Couplings can be local, national and transnational, and can be organized by dedicated intermediary actors
 - Couplings provide stabilisation and direction

How does a Deep Transition emerge, accelerate, stabilize and get direction?

- Third proposition: Emergence of a dominant TEP shapes the socio-technical landscape which then reinforces directionality of MLP dynamics within systems & multi-regime dynamics
 - Landscapes does not provide structuration but a gradients for action (operates through shocks, trends and as a technotope)
 - Landscapes consist of sedimented layers; Past TEPs do not disappear but become embedded in the landscape
 - During first 5 surges TEPs have been contributing to a cumulative trajectory based on resource intensity, fossil fuels and labor productivity (capital intensity)
 - Portfolios of directions continue to exist, history consist of eco-system, e.g. multiple niches, regimes, and layered landscape.

Transforming Innovation

Creative Destruction or Destructive Creation?





Thank you.

