**Prof. Dr. Alfred Toth**

# Pariser Modelle zur Grundlegung einer ontischen Kategorientheorie L

1. Meine „Grammatik der Stadt Paris“, erschienen als Publikation des von mir seit 2001 geleiteten „Semiotisch-Technischen Laboratoriums“ (Toth 2016a), stellte in 2 Bänden auf insgesamt 507 Seiten zum ersten Mal eine Grammatik dar, deren Elemente nicht Laute, Silben, Wörter und Sätze (sowie allenfalls Texte), sondern Häuser, Straßen, Plätze und Einfriedungen und deren Materialien nicht Phoneme oder Grapheme, sondern Stein, Holz, Glas u.a. sind. Es handelt sich dabei jedoch keineswegs um die sattsam bekannte und unwissenschaftliche strukturalistische (sowie mittlerweile längst überholte) Vorstellung des „Lesens einer Stadt“ bzw. der „Stadt als Text“, sondern um eine funktionale bzw. abbildungstheoretische Beschreibung einer Stadt, basierend auf invarianten ontischen Eigenschaften (vgl. Toth 2013) sowie auf invarianten ontischen Relationen (vgl. Toth 2016b). Die im folgenden verwendeten Zeichen für Morphismen, Operatoren usw. sind in den referierten Arbeiten definiert. Für alle in den „Pariser Modellen“ vorausgesetzten theoretischen Grundlagen sei auf Toth (2017) verwiesen.

## 2. Das vollständige System funktionaler ontischer Morphismen

### 2.1. C-Morphismen

#### 2.1.1. $\alpha_C = f(S^*)$

$(\alpha_C = (X_\lambda \rightarrow Y_Z)) = f(S)$
$(\alpha_C = (X_\lambda \rightarrow Y_Z)) = f(U)$
$(\alpha_C = (X_\lambda \rightarrow Y_Z)) = f(E)$

#### 2.1.2. $\alpha_C = f(B)$

$(\alpha_C = (X_\lambda \rightarrow Y_Z)) = f(Sys)$
$(\alpha_C = (X_\lambda \rightarrow Y_Z)) = f(Abb)$
$(\alpha_C = (X_\lambda \rightarrow Y_Z)) = f(Rep)$

#### 2.1.3. $\alpha_C = f(R^*)$

$(\alpha_C = (X_\lambda \rightarrow Y_Z)) = f(Ad)$
$(\alpha_C = (X_\lambda \rightarrow Y_Z)) = f(Adj)$
$(\alpha_C = (X_\lambda \rightarrow Y_Z)) = f(Ex)$

#### 2.1.4. $\beta_C = f(S^*)$

$(\beta_C = (Y_Z \rightarrow Z_\rho)) = f(S)$
$(\beta_C = (Y_Z \rightarrow Z_\rho)) = f(U)$
$(\beta_C = (Y_Z \rightarrow Z_\rho)) = f(E)$

#### 2.1.5. $\beta_C = f(B)$

$(\beta_C = (Y_Z \rightarrow Z_\rho)) = f(Sys)$
$(\beta_C = (Y_Z \rightarrow Z_\rho)) = f(Abb)$
$(\beta_C = (Y_Z \rightarrow Z_\rho)) = f(Rep)$

#### 2.1.6. $\beta_C = f(R^*)$

$(\beta_C = (Y_Z \rightarrow Z_\rho)) = f(Ad)$
$(\beta_C = (Y_Z \rightarrow Z_\rho)) = f(Adj)$
$(\beta_C = (Y_Z \rightarrow Z_\rho)) = f(Ex)$

#### 2.1.7. $\beta\alpha_C = f(S^*)$

$(\beta\alpha_C = (X_\lambda \rightarrow Z_\rho)) = f(S)$
$(\beta\alpha_C = (X_\lambda \rightarrow Z_\rho)) = f(U)$
$(\beta\alpha_C = (X_\lambda \rightarrow Z_\rho)) = f(E)$

#### 2.1.8. $\beta\alpha_C = f(B)$

$(\beta\alpha_C = (X_\lambda \rightarrow Z_\rho)) = f(Sys)$
$(\beta\alpha_C = (X_\lambda \rightarrow Z_\rho)) = f(Abb)$
$(\beta\alpha_C = (X_\lambda \rightarrow Z_\rho)) = f(Rep)$

#### 2.1.9. $\beta\alpha_C = f(R^*)$

$(\beta\alpha_C = (X_\lambda \rightarrow Z_\rho)) = f(Ad)$
$(\beta\alpha_C = (X_\lambda \rightarrow Z_\rho)) = f(Adj)$
$(\beta\alpha_C = (X_\lambda \rightarrow Z_\rho)) = f(Ex)$

#### 2.1.10. $\alpha°_C = f(S^*)$

$(\alpha°_C = (Y_Z \rightarrow X_\lambda)) = f(S)$
$(\alpha°_C = (Y_Z \rightarrow X_\lambda)) = f(U)$
$(\alpha°_C = (Y_Z \rightarrow X_\lambda)) = f(E)$

#### 2.1.11. $\alpha°_C = f(B)$

$(\alpha°_C = (Y_Z \rightarrow X_\lambda)) = f(Sys)$
$(\alpha°_C = (Y_Z \rightarrow X_\lambda)) = f(Abb)$
$(\alpha°_C = (Y_Z \rightarrow X_\lambda)) = f(Rep)$

#### 2.1.12. $\alpha°_C = f(R^*)$

$(\alpha°_C = (Y_Z \rightarrow X_\lambda)) = f(Ad)$
$(\alpha°_C = (Y_Z \rightarrow X_\lambda)) = f(Adj)$
$(\alpha°_C = (Y_Z \rightarrow X_\lambda)) = f(Ex)$

**2.1.13. $\beta°_C = f(S^*)$**

$(\beta°_C = (Z_\rho \rightarrow Y_Z)) = f(S)$
$(\beta°_C = (Z_\rho \rightarrow Y_Z)) = f(U)$
$(\beta°_C = (Z_\rho \rightarrow Y_Z)) = f(E)$

**2.1.14. $\beta°_C = f(B)$**

$(\beta°_C = (Z_\rho \rightarrow Y_Z)) = f(Sys)$
$(\beta°_C = (Z_\rho \rightarrow Y_Z)) = f(Abb)$
$(\beta°_C = (Z_\rho \rightarrow Y_Z)) = f(Rep)$

**2.1.15. $\beta°_C = f(R^*)$**

$(\beta°_C = (Z_\rho \rightarrow Y_Z)) = f(Ad)$
$(\beta°_C = (Z_\rho \rightarrow Y_Z)) = f(Adj)$
$(\beta°_C = (Z_\rho \rightarrow Y_Z)) = f(Ex)$

**2.1.16. $\alpha°\beta°_C = f(S^*)$**

$(\alpha°\beta°_C = (Z_\rho \rightarrow X_\lambda)) = f(S)$
$(\alpha°\beta°_C = (Z_\rho \rightarrow X_\lambda)) = f(U)$
$(\alpha°\beta°_C = (Z_\rho \rightarrow X_\lambda)) = f(E)$

**2.1.17. $\alpha°\beta°_C = f(B)$**

$(\alpha°\beta°_C = (Z_\rho \rightarrow X_\lambda)) = f(Sys)$
$(\alpha°\beta°_C = (Z_\rho \rightarrow X_\lambda)) = f(Abb)$
$(\alpha°\beta°_C = (Z_\rho \rightarrow X_\lambda)) = f(Rep)$

**2.1.18. $\alpha°\beta°_C = f(R^*)$**

$(\alpha°\beta°_C = (Z_\rho \rightarrow X_\lambda)) = f(Ad)$
$(\alpha°\beta°_C = (Z_\rho \rightarrow X_\lambda)) = f(Adj)$
$(\alpha°\beta°_C = (Z_\rho \rightarrow X_\lambda)) = f(Ex)$

**2.1.19. $id_C = f(S^*)$**

$(id_{C\lambda} = (X_\lambda \rightarrow X_\lambda)) = f(S)$
$(id_{CZ} = (Y_Z \rightarrow Y_Z)) = f(U)$
$(id_{C\rho} = (Z_\rho \rightarrow Z_\rho)) = f(E)$

**2.1.20. $id_C = f(B)$**

$(id_{C\lambda} = (X_\lambda \rightarrow X_\lambda)) = f(Sys)$
$(id_{CZ} = (X_\lambda \rightarrow X_\lambda)) = f(Abb)$
$(id_{C\rho} = (X_\lambda \rightarrow X_\lambda)) = f(Rep)$

**2.1.21. $id_C = f(R^*)$**

$(id_{C\lambda} = (X_\lambda \rightarrow X_\lambda)) = f(Ad)$
$(id_{CZ} = (X_\lambda \rightarrow X_\lambda)) = f(Adj)$
$(id_{C\rho} = (X_\lambda \rightarrow X_\lambda)) = f(Ex)$

## 2.2. L-Morphismen

**2.2.1. $\alpha_L = f(S^*)$**

$(\alpha_L = (Ex \rightarrow Ad)) = f(S)$
$(\alpha_L = (Ex \rightarrow Ad)) = f(U)$
$(\alpha_L = (Ex \rightarrow Ad)) = f(E)$

**2.2.2. $\alpha_L = f(B)$**

$(\alpha_L = (Ex \rightarrow Ad)) = f(Sys)$
$(\alpha_L = (Ex \rightarrow Ad)) = f(Abb)$
$(\alpha_L = (Ex \rightarrow Ad)) = f(Rep)$

**2.2.3. $\alpha_L = f(R^*)$**

$(\alpha_L = (Ex \rightarrow Ad)) = f(Ad)$
$(\alpha_L = (Ex \rightarrow Ad)) = f(Adj)$
$(\alpha_L = (Ex \rightarrow Ad)) = f(Ex)$

**2.2.4. $\beta_L = f(S^*)$**

$(\beta_L = (Ad \rightarrow In)) = f(S)$
$(\beta_L = (Ad \rightarrow In)) = f(U)$
$(\beta_L = (Ad \rightarrow In)) = f(E)$

**2.2.5. $\beta_L = f(B)$**

$(\beta_L = (Ad \rightarrow In)) = f(Sys)$
$(\beta_L = (Ad \rightarrow In)) = f(Abb)$
$(\beta_L = (Ad \rightarrow In)) = f(Rep)$

**2.2.6. $\beta_L = f(R^*)$**

$(\beta_L = (Ad \rightarrow In)) = f(Ad)$
$(\beta_L = (Ad \rightarrow In)) = f(Adj)$
$(\beta_L = (Ad \rightarrow In)) = f(Ex)$

**2.2.7. $\beta\alpha_L = f(S^*)$**

$(\beta\alpha_L = (Ex \rightarrow In)) = f(S)$
$(\beta\alpha_L = (Ex \rightarrow In)) = f(U)$
$(\beta\alpha_L = (Ex \rightarrow In)) = f(E)$

**2.2.8. $\beta\alpha_L = f(B)$**

$(\beta\alpha_L = (Ex \rightarrow In)) = f(Sys)$
$(\beta\alpha_L = (Ex \rightarrow In)) = f(Abb)$
$(\beta\alpha_L = (Ex \rightarrow In)) = f(Rep)$

**2.2.9. $\beta\alpha_L = f(R^*)$**

$(\beta\alpha_L = (Ex \rightarrow In)) = f(Ad)$
$(\beta\alpha_L = (Ex \rightarrow In)) = f(Adj)$
$(\beta\alpha_L = (Ex \rightarrow In)) = f(Ex)$

**2.2.10. $\alpha°_L = f(S^*)$**

$(\alpha°_L = (Ad \rightarrow Ex)) = f(S)$
$(\alpha°_L = (Ad \rightarrow Ex)) = f(U)$
$(\alpha°_L = (Ad \rightarrow Ex)) = f(E)$

**2.2.11. $\alpha°_L = f(B)$**

$(\alpha°_L = (Ad \rightarrow Ex)) = f(Sys)$
$(\alpha°_L = (Ad \rightarrow Ex)) = f(Abb)$
$(\alpha°_L = (Ad \rightarrow Ex)) = f(Rep)$

**2.2.12. $\alpha°_L = f(R^*)$**

$(\alpha°_L = (Ad \rightarrow Ex)) = f(Ad)$
$(\alpha°_L = (Ad \rightarrow Ex)) = f(Adj)$
$(\alpha°_L = (Ad \rightarrow Ex)) = f(Ex)$

**2.2.13. $\beta°_L = f(S^*)$**

$(\beta°_L = (In \rightarrow Ad)) = f(S)$
$(\beta°_L = (In \rightarrow Ad)) = f(U)$
$(\beta°_L = (In \rightarrow Ad)) = f(E)$

**2.2.14. $\beta°_L = f(B)$**

$(\beta°_L = (In \rightarrow Ad)) = f(Sys)$
$(\beta°_L = (In \rightarrow Ad)) = f(Abb)$
$(\beta°_L = (In \rightarrow Ad)) = f(Rep)$

**2.2.15. $\beta°_L = f(R^*)$**

$(\beta°_L = (In \rightarrow Ad)) = f(Ad)$
$(\beta°_L = (In \rightarrow Ad)) = f(Adj)$
$(\beta°_L = (In \rightarrow Ad)) = f(Ex)$

**2.2.16. $\alpha°\beta°_L = f(S^*)$**

$(\alpha°\beta°_L = (In \rightarrow Ex)) = f(S)$
$(\alpha°\beta°_L = (In \rightarrow Ex)) = f(U)$
$(\alpha°\beta°_L = (In \rightarrow Ex)) = f(E)$

**2.2.17. $\alpha°\beta°_L = f(B)$**

$(\alpha°\beta°_L = (In \rightarrow Ex)) = f(Sys)$
$(\alpha°\beta°_L = (In \rightarrow Ex)) = f(Abb)$
$(\alpha°\beta°_L = (In \rightarrow Ex)) = f(Rep)$

**2.2.18. $\alpha°\beta°_L = f(R^*)$**

$(\alpha°\beta°_L = (In \rightarrow Ex)) = f(Ad)$
$(\alpha°\beta°_L = (In \rightarrow Ex)) = f(Adj)$
$(\alpha°\beta°_L = (In \rightarrow Ex)) = f(Ex)$

**2.2.19. $id_L = f(S^*)$**

$(id_{LEx} = (Ex \rightarrow Ex)) = f(S)$
$(id_{LAd} = (Ad \rightarrow Ad)) = f(U)$
$(id_{LIn} = (In \rightarrow In)) = f(E)$

**2.2.20. $id_L = f(B)$**

$(id_{LEx} = (Ex \rightarrow Ex)) = f(Sys)$
$(id_{LAd} = (Ad \rightarrow Ad)) = f(Abb)$
$(id_{LIn} = (In \rightarrow In)) = f(Rep)$

**2.2.21. $id_L = f(R^*)$**

$(id_{LEx} = (Ex \rightarrow Ex)) = f(Ad)$
$(id_{LAd} = (Ad \rightarrow Ad)) = f(Adj)$
$(id_{LIn} = (In \rightarrow In)) = f(Ex)$

## 2.3. O-Morphismen

**2.3.1. $\alpha_O = f(S^*)$**

$(\alpha_O = (Sub \rightarrow Koo)) = f(S)$
$(\alpha_O = (Sub \rightarrow Koo)) = f(U)$
$(\alpha_O = (Sub \rightarrow Koo)) = f(E)$

**2.3.2. $\alpha_O = f(B)$**

$(\alpha_O = (Sub \rightarrow Koo)) = f(Sys)$
$(\alpha_O = (Sub \rightarrow Koo)) = f(Abb)$
$(\alpha_O = (Sub \rightarrow Koo)) = f(Rep)$

**2.3.3. $\alpha_O = f(R^*)$**

$(\alpha_O = (Sub \rightarrow Koo)) = f(Ad)$
$(\alpha_O = (Sub \rightarrow Koo)) = f(Adj)$
$(\alpha_O = (Sub \rightarrow Koo)) = f(Ex)$

**2.3.4. $\beta_O = f(S^*)$**

$(\beta_O = (Koo \rightarrow Sup)) = f(S)$
$(\beta_O = (Koo \rightarrow Sup)) = f(U)$
$(\beta_O = (Koo \rightarrow Sup)) = f(E)$

**2.3.5. $\beta_O = f(B)$**

$(\beta_O = (Koo \rightarrow Sup)) = f(Sys)$
$(\beta_O = (Koo \rightarrow Sup)) = f(Abb)$
$(\beta_O = (Koo \rightarrow Sup)) = f(Rep)$

**2.3.6. $\beta_O = f(R^*)$**

$(\beta_O = (Koo \rightarrow Sup)) = f(Ad)$
$(\beta_O = (Koo \rightarrow Sup)) = f(Adj)$
$(\beta_O = (Koo \rightarrow Sup)) = f(Ex)$

**2.3.7. $\beta\alpha_O = f(S^*)$**

$(\beta\alpha_O = (Sub \rightarrow Sup)) = f(S)$
$(\beta\alpha_O = (Sub \rightarrow Sup)) = f(U)$
$(\beta\alpha_O = (Sub \rightarrow Sup)) = f(E)$

**2.3.8. $\beta\alpha_O = f(B)$**

$(\beta\alpha_O = (Sub \rightarrow Sup)) = f(Sys)$
$(\beta\alpha_O = (Sub \rightarrow Sup)) = f(Abb)$
$(\beta\alpha_O = (Sub \rightarrow Sup)) = f(Rep)$

**2.3.9. $\beta\alpha_O = f(R^*)$**

$(\beta\alpha_O = (Sub \rightarrow Sup)) = f(Ad)$
$(\beta\alpha_O = (Sub \rightarrow Sup)) = f(Adj)$
$(\beta\alpha_O = (Sub \rightarrow Sup)) = f(Ex)$

**2.3.10. $\alpha°_O = f(S^*)$**

$(\alpha°_O = (Ad \rightarrow Ex)) = f(S)$
$(\alpha°_O = (Ad \rightarrow Ex)) = f(U)$
$(\alpha°_O= (Ad \rightarrow Ex)) = f(E)$

**2.3.11. $\alpha°_O = f(B)$**

$(\alpha°_O = (Ad \rightarrow Ex)) = f(Sys)$
$(\alpha°_O = (Ad \rightarrow Ex)) = f(Abb)$
$(\alpha°_O = (Ad \rightarrow Ex)) = f(Rep)$

**2.3.12. $\alpha°_O = f(R^*)$**

$(\alpha°_O = (Ad \rightarrow Ex)) = f(Ad)$
$(\alpha°_O = (Ad \rightarrow Ex)) = f(Adj)$
$(\alpha°_O = (Ad \rightarrow Ex)) = f(Ex)$

**2.3.13. $\beta^\circ_O = f(S^*)$**

$(\beta^\circ_O = (Sup \rightarrow Koo)) = f(S)$
$(\beta^\circ_O = (Sup \rightarrow Koo)) = f(U)$
$(\beta^\circ_O = (Sup \rightarrow Koo)) = f(E)$

**2.3.14. $\beta^\circ_O = f(B)$**

$(\beta^\circ_O = (Sup \rightarrow Koo)) = f(Sys)$
$(\beta^\circ_O = (Sup \rightarrow Koo)) = f(Abb)$
$(\beta^\circ_O = (Sup \rightarrow Koo)) = f(Rep)$

**2.3.15. $\beta^\circ_O = f(R^*)$**

$(\beta^\circ_O = (Sup \rightarrow Koo)) = f(Ad)$
$(\beta^\circ_O = (Sup \rightarrow Koo)) = f(Adj)$
$(\beta^\circ_O = (Sup \rightarrow Koo)) = f(Ex)$

**2.3.16. $\alpha^\circ\beta^\circ_O = f(S^*)$**

$(\alpha^\circ\beta^\circ_O = (Sup \rightarrow Sub)) = f(S)$
$(\alpha^\circ\beta^\circ_O = (Sup \rightarrow Sub)) = f(U)$
$(\alpha^\circ\beta^\circ_O = (Sup \rightarrow Sub)) = f(E)$

**2.3.17. $\alpha^\circ\beta^\circ_O = f(B)$**

$(\alpha^\circ\beta^\circ_O = (Sup \rightarrow Sub)) = f(Sys)$
$(\alpha^\circ\beta^\circ_O = (Sup \rightarrow Sub)) = f(Abb)$
$(\alpha^\circ\beta^\circ_O = (Sup \rightarrow Sub)) = f(Rep)$

**2.3.18. $\alpha^\circ\beta^\circ_O = f(R^*)$**

$(\alpha^\circ\beta^\circ_O = (Sup \rightarrow Sub)) = f(Ad)$
$(\alpha^\circ\beta^\circ_O = (Sup \rightarrow Sub)) = f(Adj)$
$(\alpha^\circ\beta^\circ_O = (Sup \rightarrow Sub)) = f(Ex)$

**2.3.19. $id_O = f(S^*)$**

$(id_{OSub} = (Sub \rightarrow Sub)) = f(S)$
$(id_{OKoo} = (Koo \rightarrow Koo)) = f(U)$
$(id_{OSup} = (Sup \rightarrow Sup)) = f(E)$

**2.3.20. $id_O = f(B)$**

$(id_{OSub} = (Sub \rightarrow Sub)) = f(Sys)$
$(id_{OKoo} = (Koo \rightarrow Koo)) = f(Abb)$
$(id_{OSup} = (Sup \rightarrow Sup)) = f(Rep)$

**2.3.21. $id_O = f(R^*)$**

$(id_{OSub} = (Sub \rightarrow Sub)) = f(Ad)$
$(id_{OKoo} = (Koo \rightarrow Koo)) = f(Adj)$
$(id_{OSup} = (Sup \rightarrow Sup)) = f(Ex)$

## 2.4. Q-Morphismen

**2.4.1. $\alpha_Q = f(S^*)$**

$(\alpha_Q = (Adj \rightarrow Subj)) = f(S)$
$(\alpha_Q = (Adj \rightarrow Subj)) = f(U)$
$(\alpha_Q = (Adj \rightarrow Subj)) = f(E)$

**2.4.2. $\alpha_Q = f(B)$**

$(\alpha_Q = (Adj \rightarrow Subj)) = f(Sys)$
$(\alpha_Q = (Adj \rightarrow Subj)) = f(Abb)$
$(\alpha_Q = (Adj \rightarrow Subj)) = f(Rep)$

**2.4.3. $\alpha_Q = f(R^*)$**

$(\alpha_Q = (Adj \rightarrow Subj)) = f(Ad)$
$(\alpha_Q = (Adj \rightarrow Subj)) = f(Adj)$
$(\alpha_Q = (Adj \rightarrow Subj)) = f(Ex)$

**2.4.4. $\beta_Q = f(S^*)$**

$(\beta_Q = (Subj \rightarrow Transj)) = f(S)$
$(\beta_Q = (Subj \rightarrow Transj)) = f(U)$
$(\beta_Q = (Subj \rightarrow Transj)) = f(E)$

**2.4.5. $\beta_Q = f(B)$**

$(\beta_Q = (Subj \rightarrow Transj)) = f(Sys)$
$(\beta_Q = (Subj \rightarrow Transj)) = f(Abb)$
$(\beta_Q = (Subj \rightarrow Transj)) = f(Rep)$

**2.4.6. $\beta_Q = f(R^*)$**

$(\beta_Q = (Subj \rightarrow Transj)) = f(Ad)$
$(\beta_Q = (Subj \rightarrow Transj)) = f(Adj)$
$(\beta_Q = (Subj \rightarrow Transj)) = f(Ex)$

**2.4.7. $\beta\alpha_Q = f(S^*)$**

$(\beta\alpha_Q = (Adj \rightarrow Transj)) = f(S)$

**2.4.8. $\beta\alpha_Q = f(B)$**

$(\beta\alpha_Q = (Adj \rightarrow Transj)) = f(Sys)$

**2.4.9. $\beta\alpha_Q = f(R^*)$**

$(\beta\alpha_Q = (Adj \rightarrow Transj)) = f(Ad)$

$(\beta\alpha_Q = (Adj \rightarrow Transj)) = f(U)$ $(\beta\alpha_Q = (Adj \rightarrow Transj)) = f(Abb)$ $(\beta\alpha_Q = (Adj \rightarrow Transj)) = f(Adj)$
$(\beta\alpha_Q = (Adj \rightarrow Transj)) = f(E)$ $(\beta\alpha_Q = (Adj \rightarrow Transj)) = f(Rep)$ $(\beta\alpha_Q = (Adj \rightarrow Transj)) = f(Ex)$

**2.4.10. $\alpha°_Q = f(S^*)$** **2.4.11. $\alpha°_Q = f(B)$** **2.4.12. $\alpha°_Q = f(R^*)$**

$(\alpha°_Q = (Subj \rightarrow Adj)) = f(S)$ $(\alpha°_Q = (Subj \rightarrow Adj)) = f(Sys)$ $(\alpha°_Q = (Subj \rightarrow V)) = f(Ad)$
$(\alpha°_Q = (Subj \rightarrow Adj)) = f(U)$ $(\alpha°_Q = (Subj \rightarrow Adj)) = f(Abb)$ $(\alpha°_Q = (Subj \rightarrow Adj)) = f(Adj)$
$(\alpha°_Q = (Subj \rightarrow Adj)) = f(E)$ $(\alpha°_Q = (Subj \rightarrow Adj)) = f(Rep)$ $(\alpha°_Q = (Subj \rightarrow Adj)) = f(Ex)$

**2.4.13. $\beta°_Q = f(S^*)$** **2.4.14. $\beta°_Q = f(B)$** **2.4.15. $\beta°_Q = f(R^*)$**

$(\beta°_Q = (Transj \rightarrow Subj)) = f(S)$ $(\beta°_Q = (Transj \rightarrow Subj)) = f(Sys)$ $(\beta°_Q = (Transj \rightarrow Subj)) = f(Ad)$
$(\beta°_Q = (Transj \rightarrow Subj)) = f(U)$ $(\beta°_Q = (Transj \rightarrow Subj)) = f(Abb)$ $(\beta°_Q = (Transj \rightarrow Subj)) = f(Adj)$
$(\beta°_Q = (Transj \rightarrow Subj)) = f(E)$ $(\beta°_Q = (Transj \rightarrow Subj)) = f(Rep)$ $(\beta°_Q = (Transj \rightarrow Subj)) = f(Ex)$

**2.4.16. $\alpha°\beta°_Q = f(S^*)$** **2.4.17. $\alpha°\beta°_Q = f(B)$** **2.4.18. $\alpha°\beta°_Q = f(R^*)$**

$(\alpha°\beta°_Q = (Transj \rightarrow Adj)) = f(S)$ $(\alpha°\beta°_Q = (Transj \rightarrow Adj)) = f(Sys)$ $(\alpha°\beta°_Q = (Transj \rightarrow Adj)) = f(Ad)$
$(\alpha°\beta°_Q = (Transj \rightarrow Adj)) = f(U)$ $(\alpha°\beta°_Q = (Transj \rightarrow Adj)) = f(Abb)$ $(\alpha°\beta°_Q = (Transj \rightarrow Adj)) = f(Adj)$
$(\alpha°\beta°_Q = (Transj \rightarrow Adj)) = f(E)$ $(\alpha°\beta°_Q = (Transj \rightarrow Adj)) = f(Rep)$ $(\alpha°\beta°_Q = (Transj \rightarrow Adj)) = f(Ex)$

**2.4.19. $id_Q = f(S^*)$** **2.4.20. $id_Q = f(B)$** **2.4.21. $id_Q = f(R^*)$**

$(id_{QAdj} = (Adj \rightarrow Adj)) = f(S)$ $(id_{QAdj} = (Adj \rightarrow Adj)) = f(Sys)$ $(id_{QAdj} = (Adj \rightarrow Adj)) = f(Ad)$
$(id_{QSubj} = (Subj \rightarrow Subj)) = f(U)$ $(id_{QSubj} = (Subj \rightarrow Subj)) = f(Abb)$ $(id_{QSubj} = (Subj \rightarrow Subj)) = f(Adj)$
$(id_{QTransj} = (Transj \rightarrow Transj)) = f(E)$ $(id_{QTransj} = (Transj \rightarrow Transj)) = f(Rep)$ $(id_{QTransj} = (Transj \rightarrow Transj)) = f(Ex)$

**2.5. J-Morphismen**

**2.5.1. $\alpha_J = f(S^*)$** **2.5.2. $\alpha_J = f(B)$** **2.5.3. $\alpha_J = f(R^*)$**

$(\alpha_J = (Adjn \rightarrow Subjn)) = f(S)$ $(\alpha_J = (Adjn \rightarrow Subjn)) = f(Sys)$ $(\alpha_J = (Adjn \rightarrow Subjn)) = f(Ad)$
$(\alpha_J = (Adjn \rightarrow Subjn)) = f(U)$ $(\alpha_J = (Adjn \rightarrow Subjn)) = f(Abb)$ $(\alpha_J = (Adjn \rightarrow Subjn)) = f(Adj)$

($\alpha_J$ = (Adjn → Subjn)) = f(E)
($\alpha_J$ = (Adjn → Subjn)) = f(Rep)
($\alpha_J$ = (Adjn → Subjn)) = f(Ex)

**2.5.4. $\beta_J$ = f(S*)**

($\beta_J$ = (Subjn → Transjn)) = f(S)
($\beta_J$ = (Subjn → Transjn)) = f(U)
($\beta_J$ = (Subjn → Transjn)) = f(E)

**2.5.5. $\beta_J$ = f(B)**

($\beta_J$ = (Subjn → Transjn)) = f(Sys)
($\beta_J$ = (Subjn → Transjn)) = f(Abb)
($\beta_J$ = (Subjn → Transjn)) = f(Rep)

**2.5.6. $\beta_J$ = f(R*)**

($\beta_J$ = (Subjn → Transjn)) = f(Ad)
($\beta_J$ = (Subjn → Transjn)) = f(Adj)
($\beta_J$ = (Subjn → Transjn)) = f(Ex)

**2.5.7. $\beta\alpha_J$ = f(S*)**

($\beta\alpha_J$ = (Adjn → Transjn)) = f(S)
($\beta\alpha_J$ = (Adjn → Transjn)) = f(U)
($\beta\alpha_J$ = (Adjn → Transjn)) = f(E)

**2.5.8. $\beta\alpha_J$ = f(B)**

($\beta\alpha_J$ = (Adjn → Transjn)) = f(Sys)
($\beta\alpha_J$ = (Adjn → Transjn)) = f(Abb)
($\beta\alpha_J$ = (Adjn → Transjn)) = f(Rep)

**2.5.9. $\beta\alpha_J$ = f(R*)**

($\beta\alpha_J$ = (Adjn → Transjn)) = f(Ad)
($\beta\alpha_J$ = (Adjn → Transjn)) = f(Adj)
($\beta\alpha_J$ = (Adjn → Transjn)) = f(Ex)

**2.5.10. $\alpha°_J$ = f(S*)**

($\alpha°_J$ = (Subjn → Adjn)) = f(S)
($\alpha°_J$ = (Subjn → Adjn)) = f(U)
($\alpha°_J$ = (Subjn → Adjn)) = f(E)

**2.5.11. $\alpha°_J$ = f(B)**

($\alpha°_J$ = (Subjn → Adjn)) = f(Sys)
($\alpha°_J$ = (Subjn → Adjn)) = f(Abb)
($\alpha°_J$ = (Subjn → Adjn)) = f(Rep)

**2.5.12. $\alpha°_J$ = f(R*)**

($\alpha°_J$ = (Subjn → Adjn)) = f(Ad)
($\alpha°_J$ = (Subjn → Adjn)) = f(Adj)
($\alpha°_J$ = (Subjn → Adjn)) = f(Ex)

**2.5.13. $\beta°_J$ = f(S*)**

($\beta°_J$ = (Transjn → Subjn)) = f(S)
($\beta°_J$ = (Transjn → Subjn)) = f(U)
($\beta°_J$ = (Transjn → Subjn)) = f(E)

**2.5.14. $\beta°_J$ = f(B)**

($\beta°_J$ = (Transjn → Subjn)) = f(Sys)
($\beta°_J$ = (Transjn → Subjn)) = f(Abb)
($\beta°_J$ = (Transjn → Subjn)) = f(Rep)

**2.5.15. $\beta°_J$ = f(R*)**

($\beta°_J$ = (Transjn → Subjn)) = f(Ad)
($\beta°_J$ = (Transjn → Subjn)) = f(Adj)
($\beta°_J$ = (Transjn → Subjn)) = f(Ex)

**2.5.16. $\alpha°\beta°_J$ = f(S*)**

($\alpha°\beta°_J$ = (Transjn → Adjn)) = f(S)
($\alpha°\beta°_J$ = (Transjn → Adjn)) = f(U)

**2.5.17. $\alpha°\beta°_J$ = f(B)**

($\alpha°\beta°_J$ = (Transjn → Adjn)) = f(Sys)
($\alpha°\beta°_J$ = (Transjn → Adjn)) = f(Abb)

**2.5.18. $\alpha°\beta°_J$ = f(R*)**

($\alpha°\beta°_J$ = (Transjn → Adjn)) = f(Ad)
($\alpha°\beta°_J$ = (Transjn → Adjn)) = f(Adj)

$(\alpha°\beta°_J = (\text{Transjn} \rightarrow \text{Adjn})) = f(E)(\alpha°\beta°_J = (\text{Transjn} \rightarrow \text{Adjn})) = f(\text{Rep})(\alpha°\beta°_J = (\text{Transjn} \rightarrow \text{Adjn})) = f(\text{Ex})$

| **2.5.19. $id_J = f(S^*)$** | **2.5.20. $id_J = f(B)$** | **2.5.21. $id_J = f(R^*)$** |
|---|---|---|
| $(id_{JAdjn} = (\text{Sub} \rightarrow \text{Sub})) = f(S)$ | $(id_{JAdjn} = (\text{Sub} \rightarrow \text{Sub})) = f(\text{Sys})$ | $(id_{JAdjn} = (\text{Sub} \rightarrow \text{Sub})) = f(\text{Ad})$ |
| $(id_{JSubjn} = (\text{Koo} \rightarrow \text{Koo})) = f(U)$ | $(id_{JSubjn} = (\text{Koo} \rightarrow \text{Koo})) = f(\text{Abb})$ | $(id_{JSubjn} = (\text{Koo} \rightarrow \text{Koo})) = f(\text{Adj})$ |
| $(id_{JTransjn} = (\text{Sup} \rightarrow \text{Sup})) = f(E)$ | $(id_{JTransjn} = (\text{Sup} \rightarrow \text{Sup})) = f(\text{Rep})$ | $(id_{JTransjn} = (\text{Sup} \rightarrow \text{Sup})) = f(\text{Ex})$ |

**3.** Im vorliegenden Kapitel wird aus dem obigen vollständigen System die ontische Tripelrelation 2.3.8. durch ontische Modelle illustriert.

| **2.3.7. $\beta\alpha_O = f(S^*)$** | **2.3.8. $\beta\alpha_O = f(B)$** | **2.3.9. $\beta\alpha_O = f(R^*)$** |
|---|---|---|
| $(\beta\alpha_O = (\text{Sub} \rightarrow \text{Sup})) = f(S)$ | $(\beta\alpha_O = (\text{Sub} \rightarrow \text{Sup})) = f(\text{Sys})$ | $(\beta\alpha_O = (\text{Sub} \rightarrow \text{Sup})) = f(\text{Ad})$ |
| $(\beta\alpha_O = (\text{Sub} \rightarrow \text{Sup})) = f(U)$ | $(\beta\alpha_O = (\text{Sub} \rightarrow \text{Sup})) = f(\text{Abb})$ | $(\beta\alpha_O = (\text{Sub} \rightarrow \text{Sup})) = f(\text{Adj})$ |
| $(\beta\alpha_O = (\text{Sub} \rightarrow \text{Sup})) = f(E)$ | $(\beta\alpha_O = (\text{Sub} \rightarrow \text{Sup})) = f(\text{Rep})$ | $(\beta\alpha_O = (\text{Sub} \rightarrow \text{Sup})) = f(\text{Ex})$ |

3.1 $(\beta\alpha_O = (\text{Sub} \rightarrow \text{Sup})) = f(\text{Sys})$


Rue Legendre, Paris

3.2 $(\beta\alpha_O = (Sub \rightarrow Sup)) = f(Abb)$


Rue de Chartres, Paris

3.3. $(\beta\alpha_O = (Sub \rightarrow Sup)) = f(Rep)$

Square Marcel Bleustein-Blanchet, Paris

## 4. Literatur

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