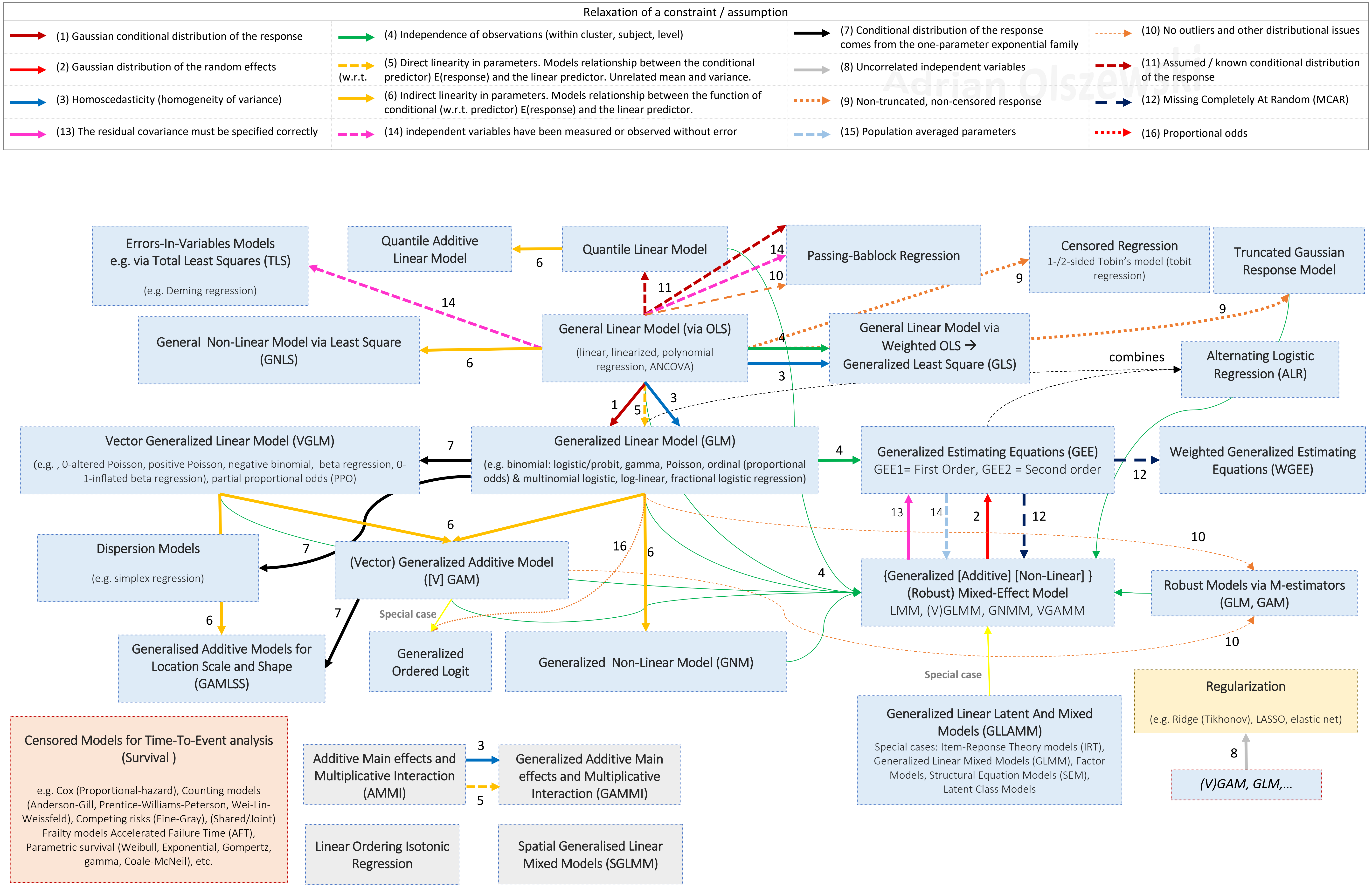
Relaxation of a constraint / assumption
(1) Gaussian conditional distribution of the response
(4) Independence of observations (within cluster, subject, level)
(7) Conditional distribution of the response comes from the one-parameter exponential family
(10) No outliers and other distributional issues
(2) Gaussian distribution of the random effects
(5) Direct linearity in parameters. Models relationship between the conditional (w.r.t. predictor) E(response) and the linear predictor. Unrelated mean and variance.
(8) Uncorrelated independent variables
(11) Assumed / known conditional distribution of the response
(3) Homoscedasticity (homogeneity of variance)
(6) Indirect linearity in parameters. Models relationship between the function of conditional (w.r.t. predictor) E(response) and the linear predictor.
(9) Non-truncated, non-censored response
(12) Missing Completely At Random (MCAR)
(13) The residual covariance must be specified correctly
(14) independent variables have been measured or observed without error
(15) Population averaged parameters
(16) Proportional odds
Errors-In-Variables Models
e.g. via Total Least Squares (TLS)
(e.g. Deming regression)
Quantile Additive Linear Model
Quantile Linear Model
Passing-Bablock Regression
Censored Regression
1-/2-sided Tobin's model (tobit regression)
Truncated Gaussian Response Model
General Non-Linear Model via Least Square (GNLS)
General Linear Model (via OLS)
(linear, linearized, polynomial regression, ANCOVA)
General Linear Model via Weighted OLS → Generalized Least Square (GLS)
combines
Alternating Logistic Regression (ALR)
Vector Generalized Linear Model (VGLM)
(e.g. , 0-altered Poisson, positive Poisson, negative binomial, beta regression, 0-1-inflated beta regression), partial proportional odds (PPO)
Generalized Linear Model (GLM)
(e.g. binomial: logistic/probit, gamma, Poisson, ordinal (proportional odds) & multinomial logistic, log-linear, fractional logistic regression)
Generalized Estimating Equations (GEE)
GEE1= First Order, GEE2 = Second order
Weighted Generalized Estimating Equations (WGEE)
Dispersion Models
(e.g. simplex regression)
(Vector) Generalized Additive Model ([V] GAM)
{Generalized [Additive] [Non-Linear] } (Robust) Mixed-Effect Model
LMM, (V)GLMM, GNMM, VGAMM
Robust Models via M-estimators (GLM, GAM)
Special case
Generalised Additive Models for Location Scale and Shape (GAMLSS)
Generalized Ordered Logit
Generalized Non-Linear Model (GNM)
Special case
Generalized Linear Latent And Mixed Models (GLLAMM)
Special cases: Item-Reponse Theory models (IRT), Generalized Linear Mixed Models (GLMM), Factor Models, Structural Equation Models (SEM), Latent Class Models
Regularization
(e.g. Ridge (Tikhonov), LASSO, elastic net)
(V)GAM, GLM,...
Censored Models for Time-To-Event analysis (Survival )
e.g. Cox (Proportional-hazard), Counting models (Anderson-Gill, Prentice-Williams-Peterson, Wei-Lin-Weissfeld), Competing risks (Fine-Gray), (Shared/Joint) Frailty models Accelerated Failure Time (AFT), Parametric survival (Weibull, Exponential, Gompertz, gamma, Coale-McNeil), etc.
Additive Main effects and Multiplicative Interaction (AMMI)
Generalized Additive Main effects and Multiplicative Interaction (GAMMI)
Linear Ordering Isotonic Regression
Spatial Generalised Linear Mixed Models (SGLMM)