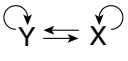
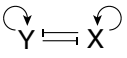
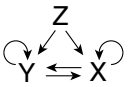
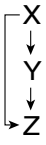
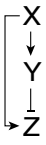
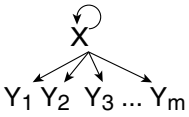
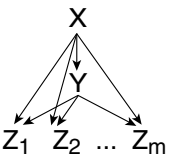
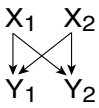
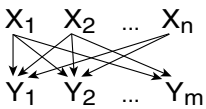
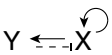
Autoregulation		
Negative autoregulation (NAR)		Speeds response time, reduces cell-cell variability of X concentration
Positive autoregulation (PAR)		Slows response time, possible bistability
Positive feedback loops		
Double-positive (Lock-ON)		Joint bistability X, Y either both ON or OFF
Double-negative (Toggle)		Exclusive bistability X ON, Y OFF or vice versa
Regulated double-positive		Lock-on: X, Y stays ON after input Z turns OFF
Feedforward loops		
Coherent feedforward loop (C1-FFL)		Sign-sensitive delay filters out brief ON input pulses when the Z-input function is AND logic, and OFF pulses when the input function is OR logic.
Incoherent feedforward loop (I1-FFL)		Pulse generation, sign-sensitive, response acceleration, biphasic dose response, fold-change detection.
Single-input module (SIM)		Coordinated control, Temporal (LIFO) order of promoter activity
Multi-output feedforward loop (multi-output FFL)		Acts as FFL for each input (sign-sensitive delay, etc) FIFO temporal order of promoter activity
Bi-fan		Combinatorial logic based on multiple inputs, depends on input function of each gene
Dense overlapping regulons (DOR)		
Negative feedback loops		
Oscillator motif		Can generate relaxation oscillations with tunable frequency
Repressilator		Can generate delay oscillations

FIGURE 6.21