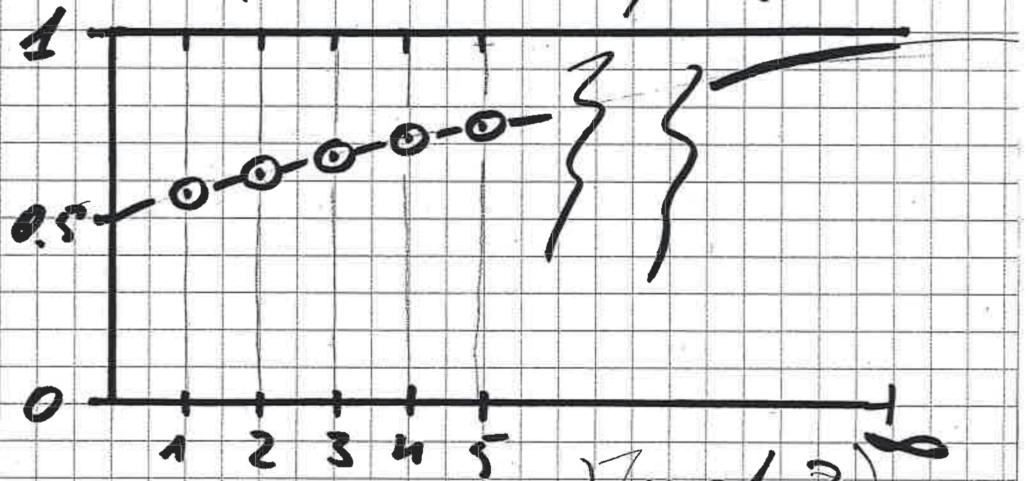
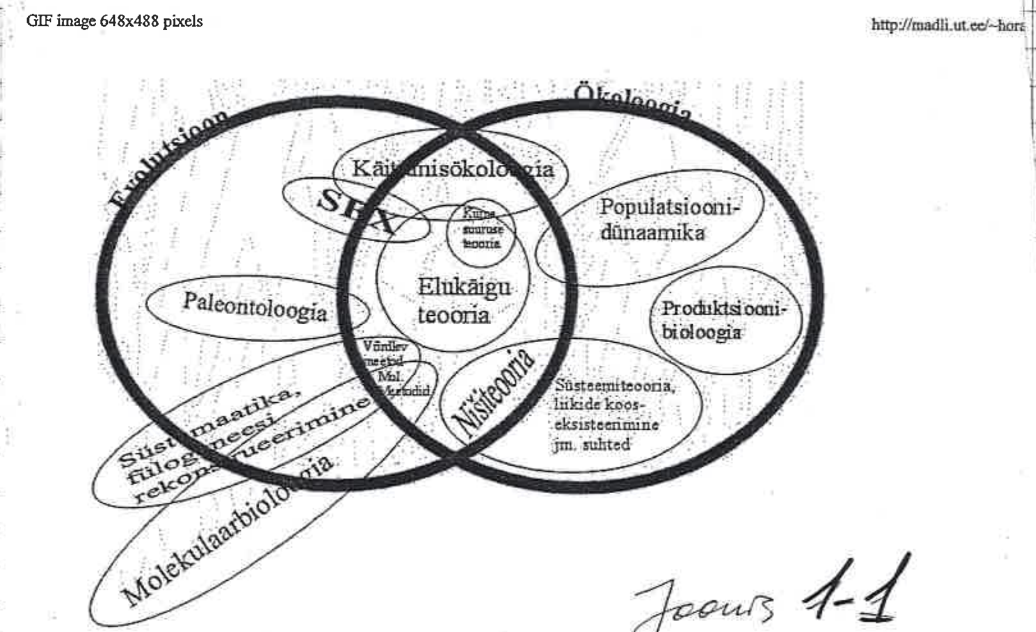
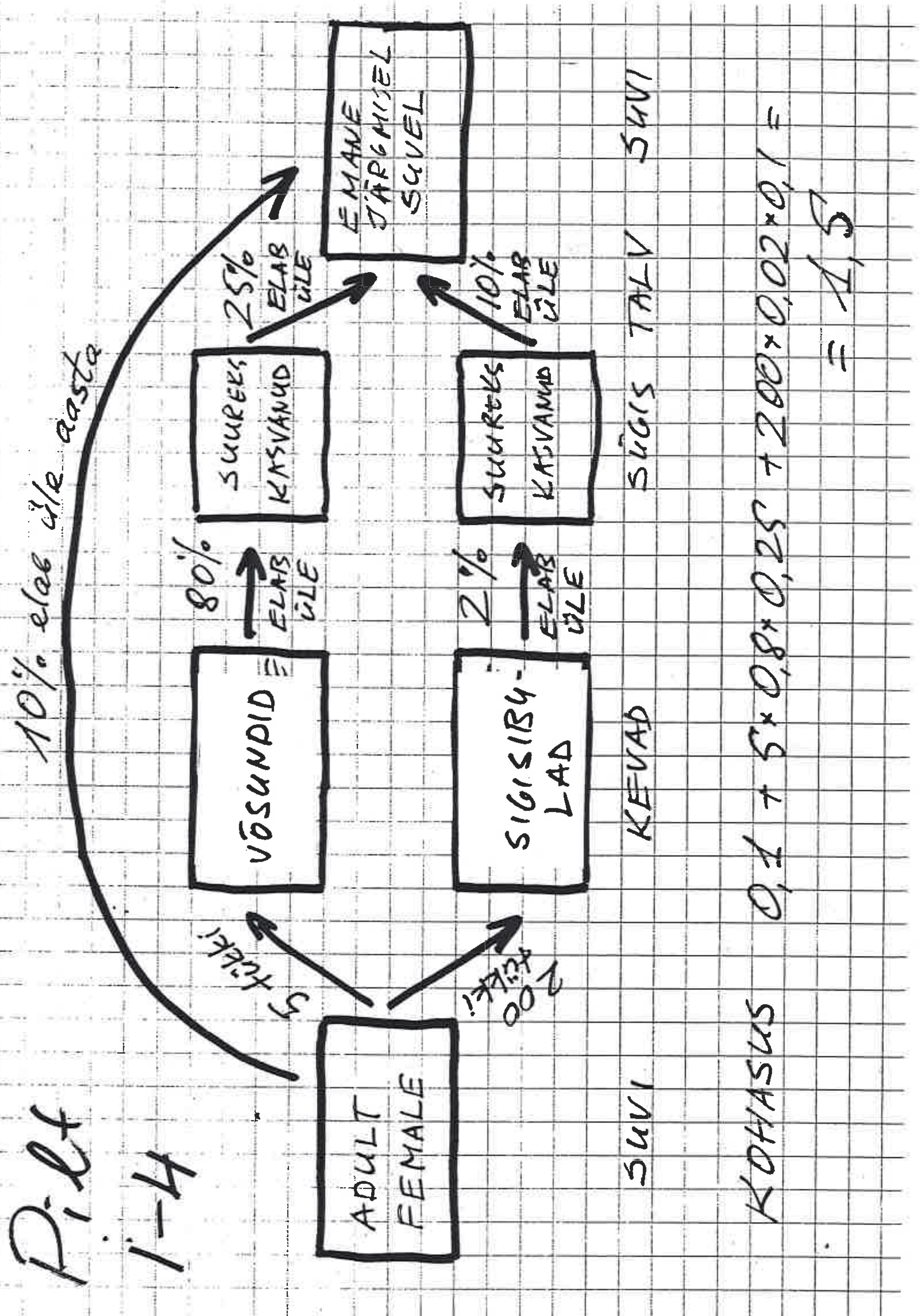
Alleelisageduse muutus, kui kohasus 1 ja 0.8



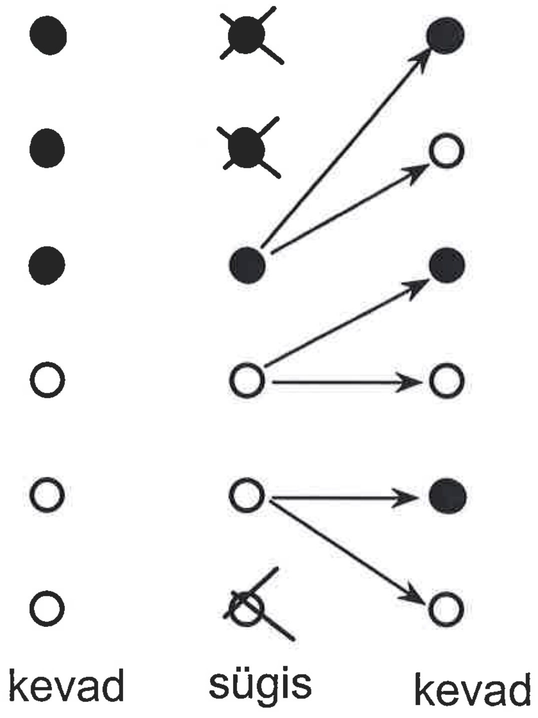
Joonis 1-2



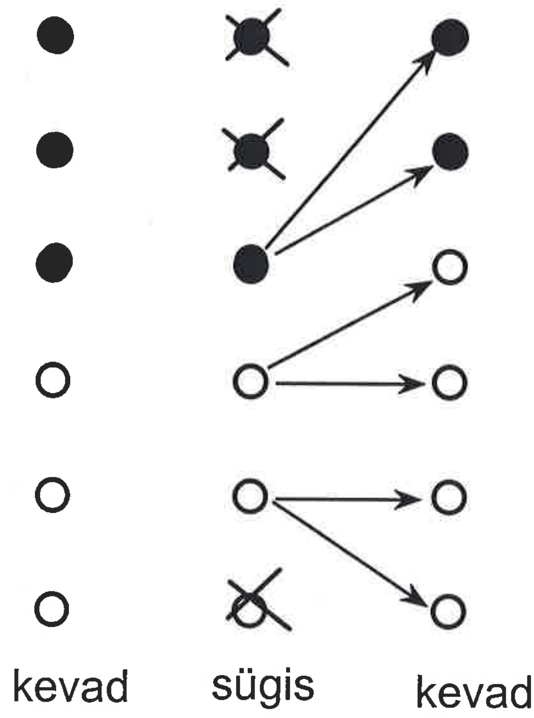
Joonis 1-1



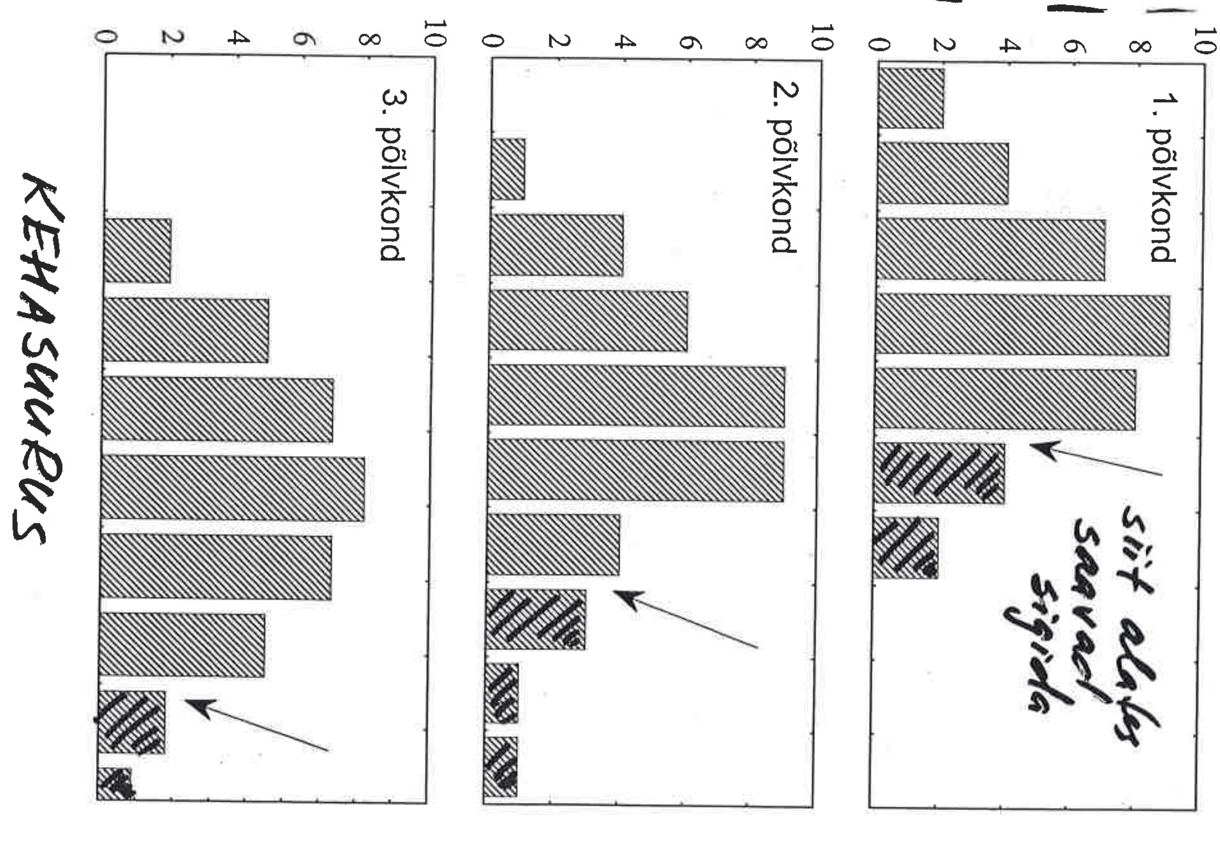
Pilt 1-4



Pilt 1-7. Olukord, kus näeme toimumas looduslikku valikut laiemas mõttes (fenotüübilist valikut), kuid valik kitsamas mõttes ei toimi, sest värvus ei ole päritav (võrdle pildiga 1-1A).



Pilt 1-1A. Looduslik valik. Populatsioonis on musti ja valgeid fenotüüpe, sügisel saab musti kaks korda rohkem surma kui valgeid. Talvel paljunetakse ja kuna värvus on täiel määral päritav, siis on järgmisel kevadel valgeid kaks korda rohkem kui musti - öeldakse, et valge värvuse kasuks toimis looduslik valik.



Pilt 1-1B. Kunstliku valiku rakendamine kehasuurusele. Katse läbiviija lubab igas põlvkonnas paljuneda vaid teatud läviväärtusest suurematel elukatel (topeltviirutusega tulbad).

1-3

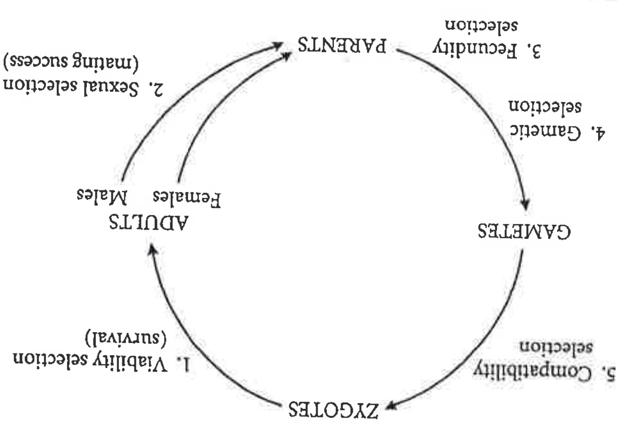
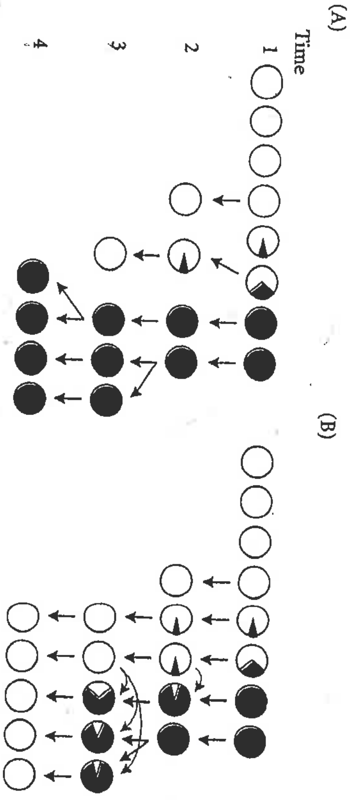


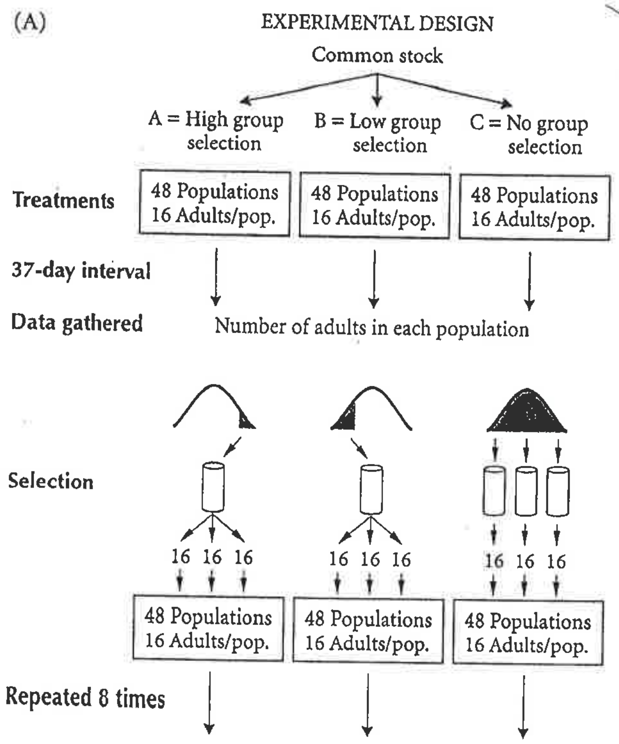
FIGURE 13.4 An oversimplified portrait of the components of natural selection that may affect the fitness of a sexually reproducing organism over the life cycle. Beginning with newly formed zygotes, (1) genotypes may differ in survival to adulthood; (2) they may differ in the numbers of mates they obtain, especially males; (3) those that become parents may differ in fecundity (number of gametes produced, especially eggs); (4) selection may occur among the haploid genotypes of gametes, as in differential viability or meiotic drive; and (5) unions of some combinations of gametic genotypes may be more compatible than others. (After Christiansen 1984.)

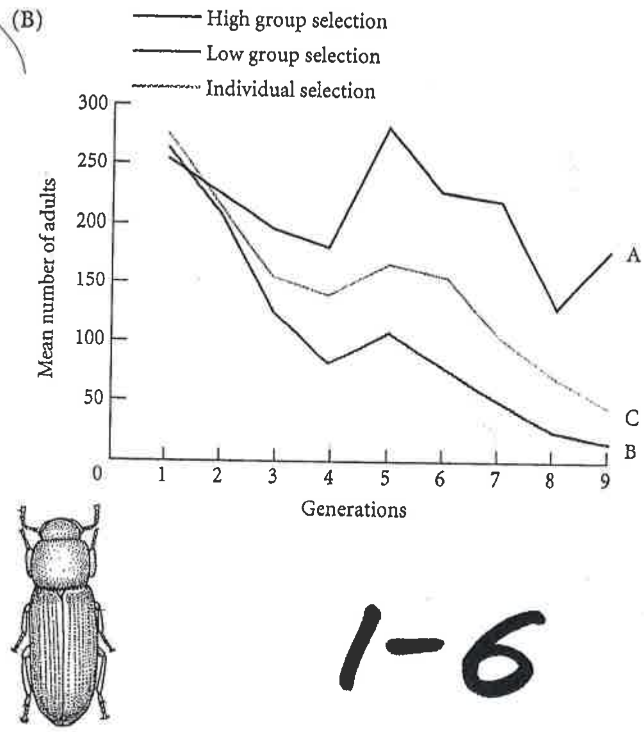
FIGURE 12.17 Conflict in the evolution of traits advantageous to the individual versus the population. Each circle represents a population of a species, traced through four time periods. New populations are founded by colonists from established populations, and some populations become extinct. The dark and light areas in each circle represent the proportions of an "altruistic" genotype (dark) and a "selfish" (light) genotype, the latter having a higher reproductive rate (individual fitness). Lateral arrows indicate gene flow between populations. *Within* each population, the selfish genotype increases in frequency by individual selection, but extinction of a population is more likely, the higher the frequency of the selfish genotype. (A) Wynne-Edwards assumed that altruistic behavior, such as reproductive restraint, would evolve because group selection by differential extinction vs. survival of populations is strong. (B) Williams argued that genotype frequencies within populations would change much faster than rates of extinction and founding of whole populations, so that the selfish genotype would become fixed.



1-5

FIGURE 12.15 Effects of individual selection and group selection on population size in the flour beetle *Tribolium castaneum.* (A) The experimental design. In each generation, only the most (treatment A) or least (treatment B) productive populations were propagated (group selection). In treatment C, all populations were propagated, so any changes were due to natural selection among individuals within populations. (B) Changes in the mean number of adult beetles in the three treatments. The decline of population size due to individual selection (C) was enhanced (B) or counteracted (A) by group selection. (After Wade 1977.)





1-6