1)The reason that they chose signals kill and stop to be only handled by the operating system is because it is necessary to ensure that some processes are killed without a doubt. Users are able to define signal handlers which are able to override the default values of all other the signal. With this, users could change the functionality of kill and stop, which could cause many problems.

2)What we gain from the pause system call is that pause is actually waiting for a signal to tell it what to do while an infinite while loop will keep going.

3)We mask other signals because if you do not, then it might be interrupted which can cause data corruption.

4) We do not mask the SIGALRM signal because if we masked it, then we would not know when the time out has completed. You can use sigdelset to remove the masked set.