Susannah A. Nesmith and Luisa Yanez, Knight Ridder, 2004.08.29:

"Holes in U.S. security exposed by woman mailed to Miami

"The young Cuban woman who express-mailed herself to Miami last week was not the first to try such a stunt, and officials acknowledged Thursday that a determined terrorist could slip past U.S. security the same way.

"U.S. Customs and Border Patrol agents say they can't physically check every person, package and container that comes into the United States. Similarly,

Transportation Security Administration officials say they can't physically check for explosives in every box and crate that goes on a domestic flight.

" 'All cargo is inspected and the highest risk pieces are the ones that get checked,' said TSA spokeswoman Jennifer Marty, adding that if officials tried to use explosives-sniffing dogs or machines on every single item, 'commerce would come to a halt.'

"Instead, TSA and Customs agents target shipments and packages they consider suspicious and conduct random checks on others."

Assignment due 2004.08.25: read
foreword and preface of textbook.

Assignment due 2004.08.27: read
textbook Chapter 1 pages 1–14,
up to "The Trinity of Trouble."

Assignment due today: read
the rest of Chapter 1.

Assignment due 2004.09.03: Read Gaim.
`http://cr.yp.to/2004-494/gaim.html`

gdb-format x86 assembly language:

```
0x80484a0: mov (%esp,1),%eax
0x80484a3: mov %eax,0x8049644
0x80484a8: ret
0x80484ac: sub $0xc,%esp
0x80484af: add $0xfffffff4,%esp
0x80484b2: push $0x7
0x80484b4: call 0x80484a0
0x80484b9: add $0x10,%esp
0x80484bc: add $0xfffffff4,%esp
0x80484bf: push 0x804854b
0x80484c4: call 0x8048350
```

...

Warning: Pointer arithmetic counts bytes in this language. Subtracting 12 from sp here is like sp -= 3 in C.

Actual bytes in memory:

```
0x80484a0: 8b 04 24
0x80484a3: a3 44 96 04 08
0x80484a8: c3
0x80484a9: 8d 76 00 (unused)
0x80484ac: 83 ec 0c
0x80484af: 83 c4 f4
0x80484b2: 6a 07
0x80484b4: e8 e7 ff ff ff
0x80484b9: 83 c4 10
0x80484bc: 83 c4 f4
0x80484bf: 68 4b 85 04 08
0x80484c4: e8 87 fe ff ff
```

...

Will learn about machine language later.

Memory contents when `four` calls `three`:

```
0x080484a0 (one):    8b 04 24 a3
0x080484a4:          44 96 04 08
...
0x08049644 (ptr):    b9 84 04 08
...
0xbfbff814 (sp[0]): e9 84 04 08
0xbfbff818 (sp[1]): 09 00 00 00
...
0xbfbff834:          0d 85 04 08
```

`three` changes return address by copying `ptr` to `sp[0]`. Program prints `two` `two`.

Picture looks different on other systems, such as SPARC architecture under Solaris. Can vary program accordingly.