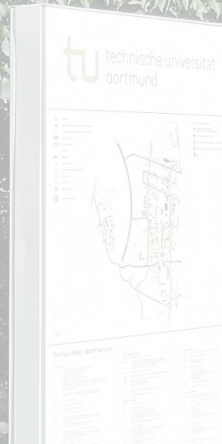


Multithread-Chicken

Emilio Pielsticker



Semaphore

- Ein **Semaphor** (σῆμα dt. Zeichen, φέρειν dt. tragen) ist eine Datenstruktur zur Verwaltung **beschränkter Ressourcen** in digitalen Systemen → Analogie: Eisenbahnsignal
- Die Semaphor wird als Zähler mit der maximalen Anzahl n der entsprechenden Ressource initialisiert: $s := n$
- **P()**: **Prolaag** = probeer te verlagen (dt. versuche zu senken)
 - $s > 0$: Ressource wird beansprucht und $s := s - 1$
 - $s = 0$: Warten bis Ressource wieder verfügbar ist: $s > 0$
- **V()**: **Verhogen** bzw. **vrijgeven** dt. freigeben: $s := s + 1$



Why did the multithread chicken crossed the road?

Faden 1

S1 = 0;

```
chicken1() {  
    printf("to ");  
    ;  
    ;  
    printf("to ");  
    ;  
    ;  
    printf("other ");  
    ;  
}
```

Faden 2

S2 = 0;

```
chicken2() {  
    ;  
    printf("get ");  
    ;  
}
```

Faden 3

S3 = 0;

```
chicken3() {  
    ;  
    printf("the ");  
    ;  
    ;  
    printf("side ");  
}
```

Why did the multithread chicken crossed the road?

Faden 1

S1 = 0;

```
chicken1() {  
    printf("to ");  
    ;  
    ;  
    printf("to ");  
    ;  
    ;  
    printf("other ");  
    ;  
}
```

Faden 2

S2 = 0;

```
chicken2() {  
    P(&S2);  
    printf("get ");  
    ;  
}
```

Faden 3

S3 = 0;

```
chicken3() {  
    P(&S3);  
    printf("the ");  
    ;  
    ;  
    printf("side ");  
}
```

Why did the multithread chicken crossed the road?

Faden 1

S1 = 0;

```
chicken1() {  
    printf("to ");  
    V(&S2);  
    P(&S1);  
    printf("to ");  
    ;  
    ;  
    printf("other ");  
    ;  
}
```

Faden 2

S2 = 0;

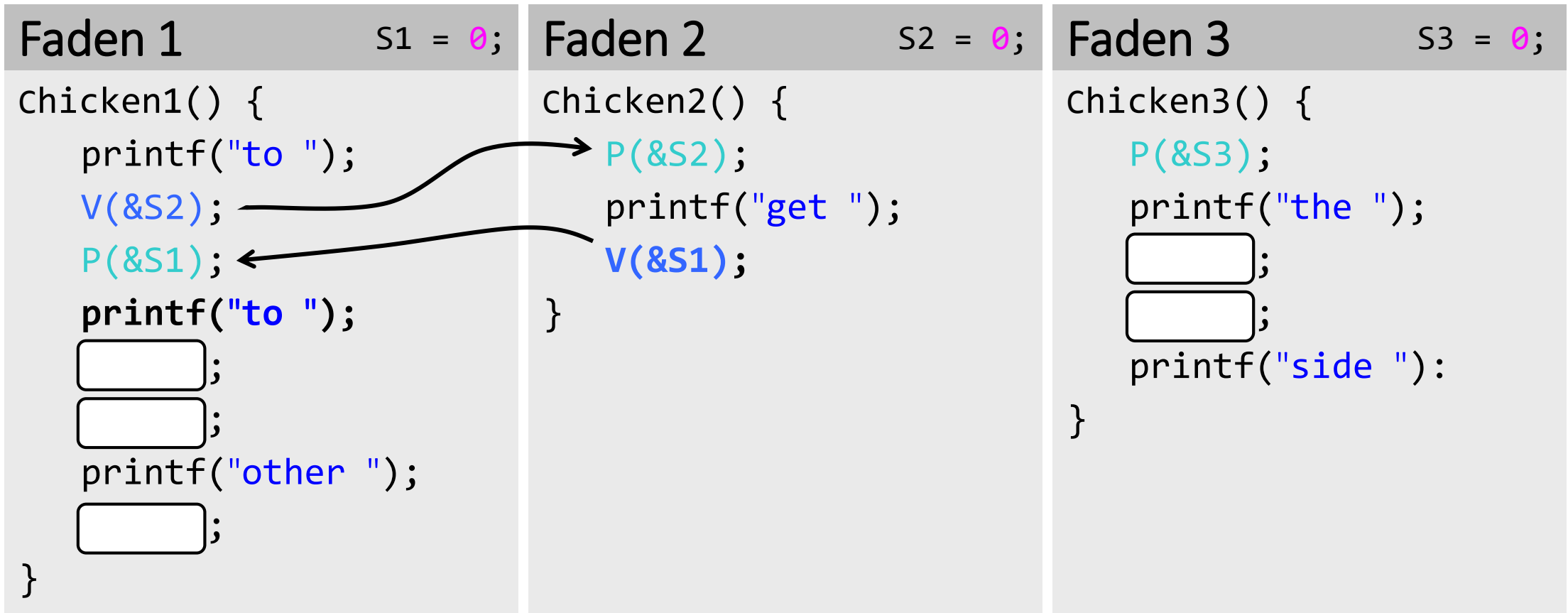
```
chicken2() {  
    P(&S2);  
    printf("get ");  
    ;  
}
```

Faden 3

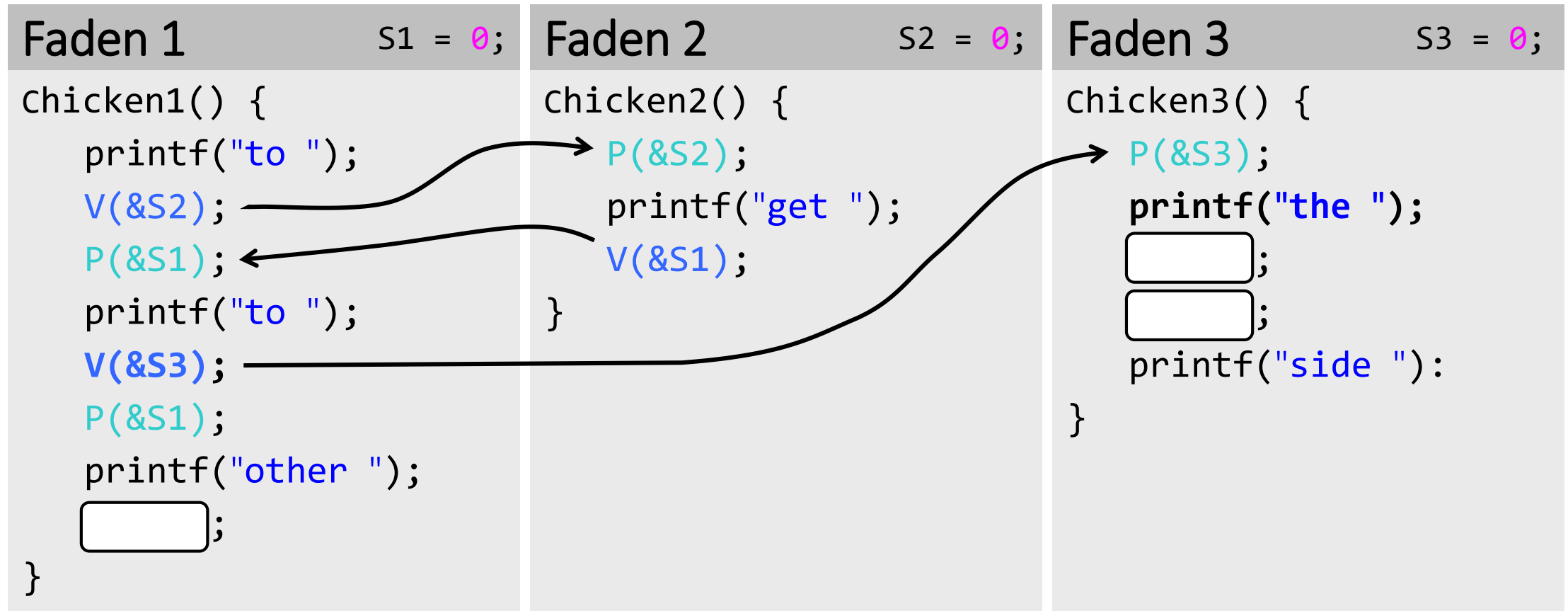
S3 = 0;

```
chicken3() {  
    P(&S3);  
    printf("the ");  
    ;  
    ;  
    printf("side ");  
}
```

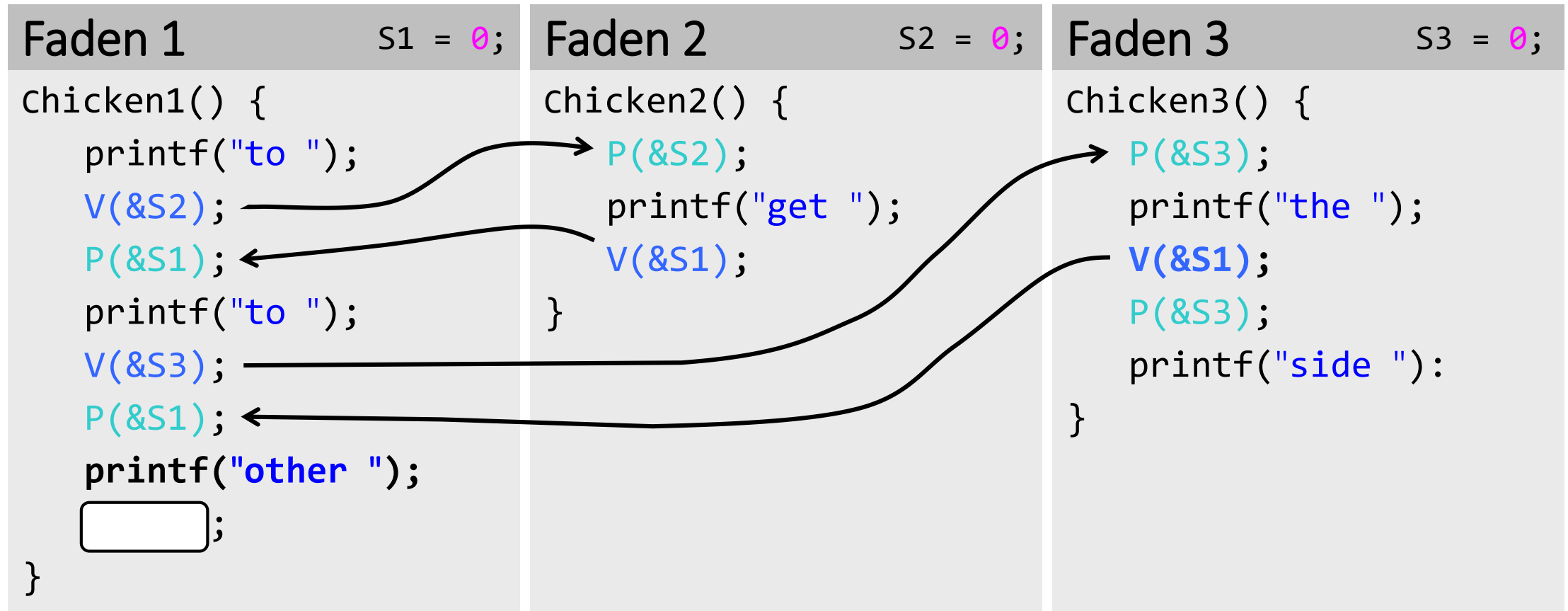
Why did the multithread chicken crossed the road?



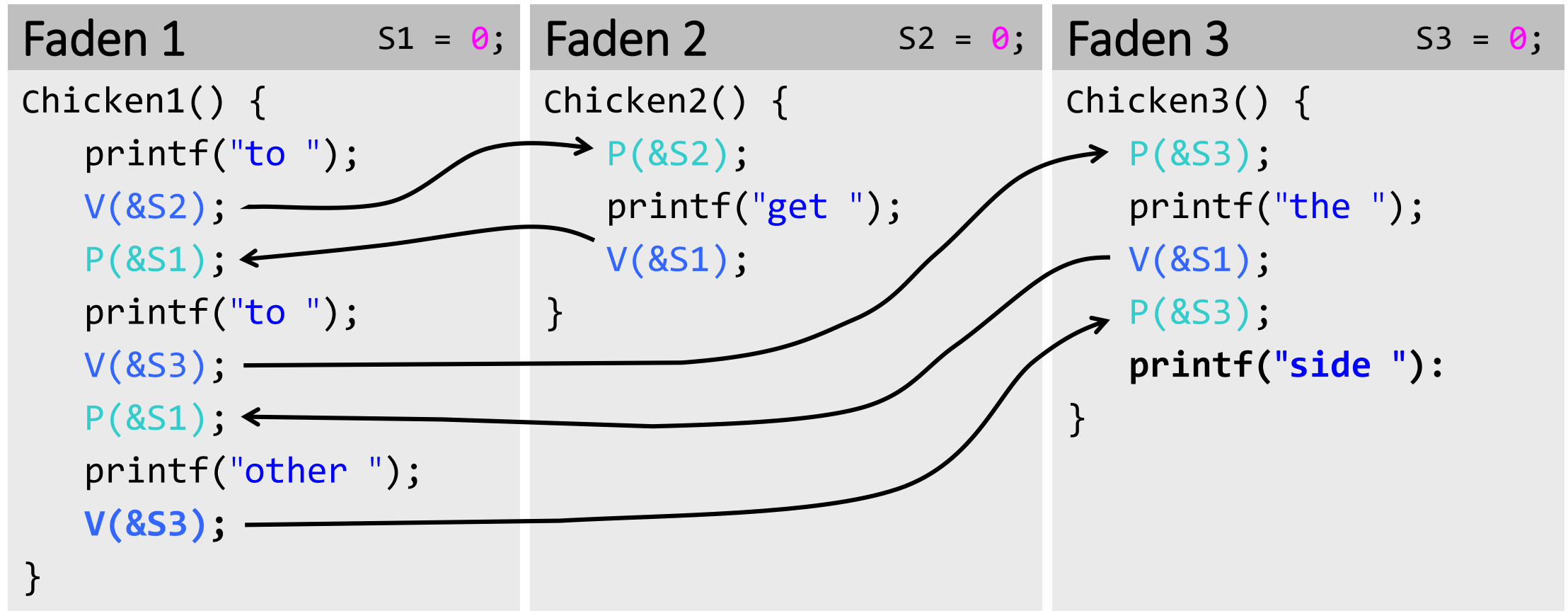
Why did the multithread chicken crossed the road?



Why did the multithread chicken crossed the road?



Why did the multithread chicken crossed the road?



Why did the multithread chicken crossed the road?

