

Tic Tac Toe Phase 3

IFT-703 Informatique cognitive

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Rappel de la problématique

Les règles :

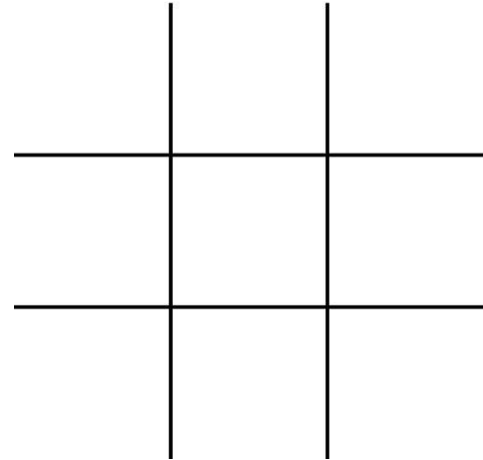
- 2 Joueurs
- Une grille de 3 lignes 3 colonnes
- Placent chacun à leur tour dans la grille leur symbole X ou O
- But : aligner 3 symboles identiques horizontalement, verticalement ou en diagonal

On modélise un seul coup

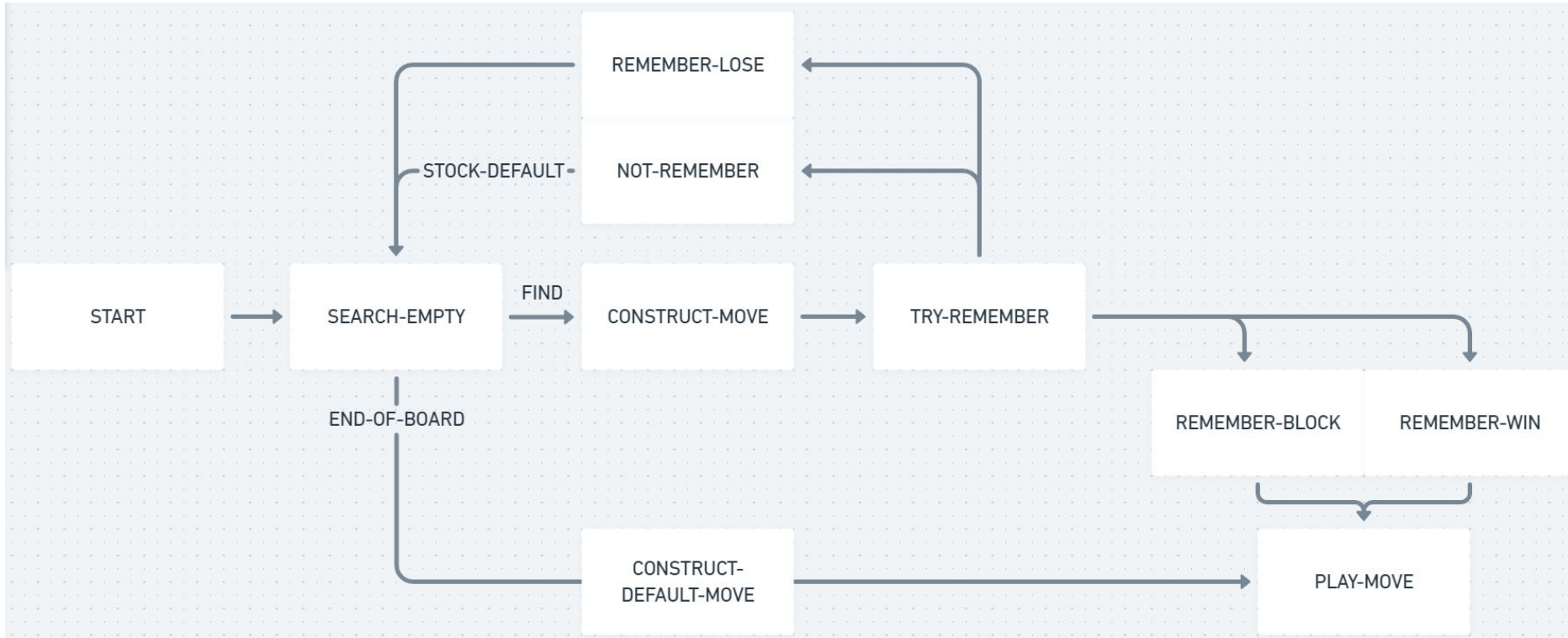
Hypothèses :

- On joue toujours les X
- Chaque joueur a joué 2 coups
- C'est à notre tour de jouer
- Il y a toujours une seule bonne solution

tic tac toe



Description d'un scénario



Structure du modèle

**(chunk-type board-state case1_1 case1_2 case1_3 case2_1 case2_2 case2_3
case3_1 case3_2 case3_3 nextLigne nextCol currentLigne currentCol
firstEmptyLig firstEmptyCol goodAnswerLig goodAnswerCol type-move state)**

Chunk goal du modèle.

- case1_1, 1_2...: cases du plateau (contient “X”, “O” ou “E”).
- nextLigne , nextCol : coordonnées de la case suivante.
- currentLigne, currentCol: coordonnées de la case actuelle.
- firstEmptyLig, firstEmptyCol: coordonnées de la première case vide où on peut jouer.
- goodAnswerLig, goodAnswerCol: coordonnées du bon coup à jouer
- type-move: type du bon coup à jouer (“gagnant” ou “bloquant”).
- state: état du modèle (“search-empty”, “create-move”, “try-remember”...).

Structure du modèle

(chunk-type pattern id case1 case2 case3)

Paternes des lignes du plateau.

- id: id du pattern
- case1, case2, case3: cases du pattern (contient "X", "O" ou "E").

```
(XOE ISA pattern id 231 case1 "X" case2 "O" case3 "E")  
(OXE ISA pattern id 321 case1 "O" case2 "X" case3 "E")  
(XEO ISA pattern id 213 case1 "X" case2 "E" case3 "O")
```

Structure du modèle

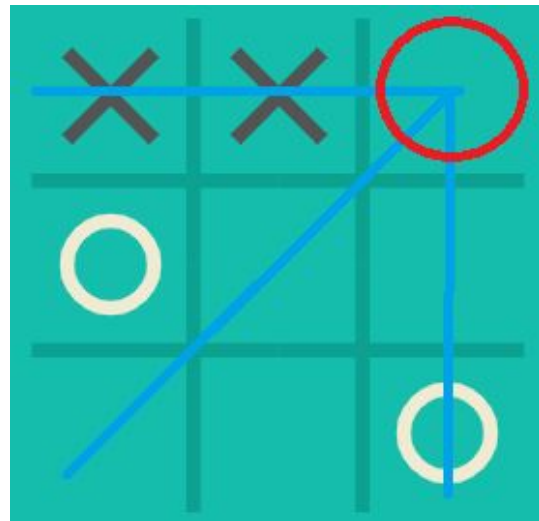
(chunk-type learned-move ligne col diag1 diag2 type)

Information que le modèle apprend.

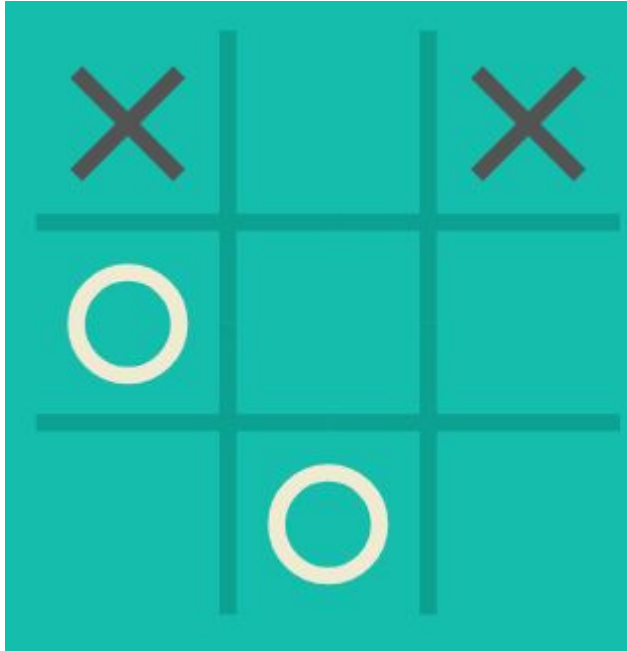
- ligne: pattern de la ligne du coup.
- col: pattern de la colonne du coup.
- diag1, diag2: pattern des diagonales du coup.
- type: type de coup(“bloquant” ou “gagnant” ou “lose”)

Exemple:

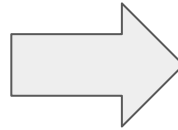
(move ISA learned-move 221 113 nil 111 “gagnant”)



Étapes du déroulement d'un scénario



Plateau initial



```
GOAL: BOARD-STATE0-0 [BOARD-STATE0]
BOARD-STATE0-0
CASE1_1 "X"
CASE1_2 "E"
CASE1_3 "X"
CASE2_1 "O"
CASE2_2 "E"
CASE2_3 "E"
CASE3_1 "E"
CASE3_2 "O"
CASE3_3 "E"
NEXTLIGNE 1
NEXTCOL 1
```

buffer goal

P-START

74 Stepper

Step

Stop

Run Until:

Time

☐ Tutor Mode

Next Step:

0.050

PROCEDURAL

CONFLICT-RESOLUTION

Last Stepped:

0.050

PROCEDURAL

PRODUCTION-FIRED START

Possible Productions

START

Bindings

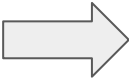
=GOAL: BOARD-STATE0-0

Production

```
(P START
=GOAL>
  STATE NIL
=>
  =GOAL>
    STATE SEARCH-EMPTY
)
```

Production Parameters

Parameters for production ST
ART:
:utility 0.000
:u 0.000
:at 0.050



P-TEST-NON-EMPTY1_1

74 Stepper

Step

Stop

Run Until:

Time

☐ Tutor Mode

Next Step:

0.100

PROCEDURAL

CONFLICT-RESOLUTION

Last Stepped:

0.100

PROCEDURAL

PRODUCTION-FIRED TEST-NON-EMPTY1_1

Possible Productions

TEST-NON-EMPTY1_1

Bindings

=GOAL: BOARD-STATE0-0

Production

```
(P TEST-NON-EMPTY1_1
=GOAL>
  STATE SEARCH-EMPTY
  NEXTLIGNE 1
  NEXTCOL 1
- CASE1_1 "E"
=>
  =GOAL>
    CURRENTLIGNE 1
    CURRENTCOL 1
    NEXTLIGNE 1
    NEXTCOL 2
)
```

Production Parameters

Parameters for production TEST-N
ON-EMPTY1_1:
:utility 0.000
:u 0.000
:at 0.050

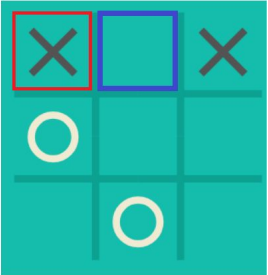
Rappel : Plateau



Current



Next



P-TEST-EMPTY1_2

74 Stepper

Step	Stop	Run Until:	Time	Tutor Mode
Next Step:	0.150	PROCEDURAL	CONFLICT-RESOLUTION	
Last Stepped:	0.150	PROCEDURAL	PRODUCTION-FIRED TEST-EMPTY1_2	

Possible Productions

TEST-EMPTY1_2

Bindings

=GOAL: BOARD-STATE0-0

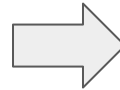
Production

```
(P TEST-EMPTY1_2
=GOAL>
  STATE SEARCH-EMPTY
  NEXTLINE 1
  NEXTCOL 2
  CASE1_2 "E"
==>
=GOAL>
  STATE CREATE-MOVE
  CURRENTLINE 1
  CURRENTCOL 2
  NEXTLINE 1
  NEXTCOL 3
)
```

Production Parameters

Parameters for production TEST-EMPTY1_2

:utility 0.000
:u 0.000
:at 0.050



P-CREATE-MOVE

74 Stepper

Step	Stop	Run Until:	Time	Tutor Mode
Next Step:	0.200	PROCEDURAL	CONFLICT-RESOLUTION	
Last Stepped:	0.200	PROCEDURAL	PRODUCTION-FIRED CREATE-MOVE	

Possible Productions

CREATE-MOVE

Bindings

=GOAL: BOARD-STATE0-0

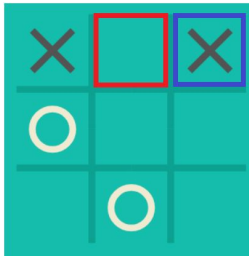
Production

```
(P CREATE-MOVE
=GOAL>
  STATE CREATE-MOVE
==>
=GOAL>
  STATE SELECT-LINE
)
```

Production Parameters

Parameters for production CREATE-MOVE

-MOVE:
:utility 0.000
:u 0.000
:at 0.050



Current



Next

P-SELECT-LINE1

74 Stepper

Step Stop Run Until: Time Tutor Mode

Next Step: 0.250 PROCEDURAL CLEAR-BUFFER RETRIEVAL

Last Stepped: 0.250 PROCEDURAL PRODUCTION-FIRED SELECT-LINE1

Possible Productions

SELECT-LINE1

Bindings

```
=C3: "X"
=C2: "E"
=C1: "X"
=GOAL: BOARD-STATE0-0
```

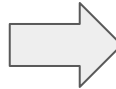
Production

```
(P SELECT-LINE1
=GOAL>
STATE SELECT-LINE
CURRENTLIGNE 1
CASE1_1 "X"
CASE1_2 "E"
CASE1_3 "X"
==>
+RETRIEVAL>
CASE1 "X"
CASE2 "E"
CASE3 "X"
=GOAL>
STATE CREATE-LIGNE
```

Production Parameters

Parameters for production SELECT

```
-LINE1:
:utility 0.000
:u 0.000
:at 0.050
```



Retrieval

74 Stepper

Step Stop Run Until: Time Tutor Mode

Next Step: 0.275 DECLARATIVE SET-BUFFER-CHUNK RETRIEVAL XEX

Last Stepped: 0.275 DECLARATIVE RETRIEVED-CHUNK XEX

Possible Chunks

XEX

Retrieval Request

```
+retrieval>
CASE1 "X"
CASE2 "E"
CASE3 "X"
```

Chunk

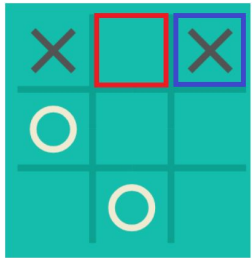
XEX

```
ID 212
CASE1 "X"
CASE2 "E"
CASE3 "X"
```

Chunk Parameters

Declarative parameters for chunk XEX:

```
:Activation 1.339
:Permanent-Noise 0.000
:Base-Level 1.339
:Creation-Time 0.000
:Reference-Count 1
:Last-Retrieval-Activation 1.3
97
:Last-Retrieval-Time 0.250
```



Current



Next

P-CREATE-LINE

74 Stepper

Step Stop Run Until: Time Tutor Mode

Next Step: 0.325 PROCEDURAL CLEAR-BUFFER RETRIEVAL

Last Stepped: 0.325 PROCEDURAL PRODUCTION-FIRED CREATE-LINE

Possible Productions

CREATE-LINE

Bindings

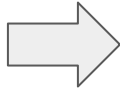
=IDPATTERN: 212
=GOAL: BOARD-STATE0-0
=RETRIEVAL: XEX-0

Production

(P CREATE-LINE
=GOAL>
STATE CREATE-LIGNE
=RETRIEVAL>
ID 212
?IMAGINAL>
STATE FREE
==>
+IMAGINAL>
LIGNE 212
=GOAL>
STATE SELECT-COL
)

Production Parameters

Parameters for production CREATE
-LINE:
:utility 0.000
:u 0.000
:at 0.050



P-SELECT-COL2

74 Stepper

Step Stop Run Until: Time Tutor Mode

Next Step: 0.375 PROCEDURAL CLEAR-BUFFER RETRIEVAL

Last Stepped: 0.375 PROCEDURAL PRODUCTION-FIRED SELECT-COL2

Possible Productions

SELECT-COL2

Bindings

=C3: "O"
=C2: "E"
=C1: "E"
=GOAL: BOARD-STATE0-0

Production

(P SELECT-COL2
=GOAL>
STATE SELECT-COL
CURRENTCOL 2
CASE1_2 "E"
CASE2_2 "E"
CASE3_2 "O"
==>
+RETRIEVAL>
CASE1 "E"
CASE2 "E"
CASE3 "O"
=GOAL>
STATE CREATE-COL
)

Production Parameters

Parameters for production SELECT
-COL2:
:utility 0.000
:u 0.000
:at 0.050

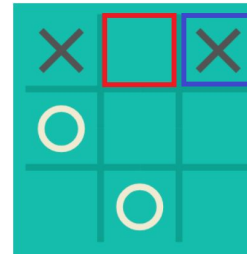
74 .buffers1 (TICTACTOE)

Contents Status

AURAL
AURAL-LOCATION
GOAL
IMAGINAL
IMAGINAL-ACTION
MANUAL
PRODUCTION
RETRIEVAL
TEMPORAL
VISUAL
VISUAL-LOCATION
VOCAL

IMAGINAL: CHUNK0-0
CHUNK0-0
LIGNE 212

Buffer imaginal



Retrieval

7% Stepper

Step	Stop	Run Until:	Time	Tutor Mode
Next Step:	0.408	DECLARATIVE	SET-BUFFER-CHUNK RETRIEVAL EEO	
Last Stepped:	0.408	DECLARATIVE	RETRIEVED-CHUNK EEO	

Possible Chunks

EEO

Retrieval Request

```
+retrieval>
CASE1 "E"
CASE2 "E"
CASE3 "O"
```

Chunk

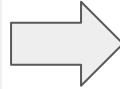
EEO

```
ID 113
CASE1 "E"
CASE2 "E"
CASE3 "O"
```

Chunk Parameters

Declarative parameters for chunk EEO:

```
:Activation 1.141
:Permanent-Noise 0.000
:Base-Level 1.141
:Creation-Time 0.000
:Reference-Count 1
:Last-Retrieval-Activation 1.100
:Last-Retrieval-Time 0.375
```



P-CREATE-COL

7% Stepper

Step	Stop	Run Until:	Time	Tutor Mode
Next Step:	0.575	PROCEDURAL	CLEAR-BUFFER RETRIEVAL	
Last Stepped:	0.575	PROCEDURAL	PRODUCTION-FIRED CREATE-COL	

Possible Productions

CREATE-COL

Bindings

```
=IDPATTERN: 113
=GOAL: BOARD-STATE0-0
=RETRIEVAL: EEO-0
=IMAGINAL: CHUNK0-0
```

Production

```
(P CREATE-COL
=GOAL>
STATE CREATE-COL
=RETRIEVAL>
ID 113
=IMAGINAL>
COL NIL
==>
=IMAGINAL>
COL 113
=GOAL>
STATE SELECT-DIAG1
)
```

Production Parameters

Parameters for production CREATE

```
-COL:
:utility 0.000
:u 0.000
:at 0.050
```

7% .buffers1 (TICTACTOE)

Contents	Status
AURAL	
AURAL-LOCATION	
GOAL	
IMAGINAL	
IMAGINAL-ACTION	
MANUAL	
PRODUCTION	
RETRIEVAL	
TEMPORAL	
VISUAL	
VISUAL-LOCATION	
VOCAL	

IMAGINAL: CHUNK0-0

```
CHUNK0-0
LIGNE 212
COL 113
```

Buffer imaginal

P-NO-DIAG1

74 Stepper

Step Stop Run Until: Time Tutor Mode

Next Step: 0.625 PROCEDURAL CONFLICT-RESOLUTION

Last Stepped: 0.625 PROCEDURAL PRODUCTION-FIRED NO-DIAG1

Possible Productions

NO-DIAG1

Bindings

```
=C3: "E"
=C2: "E"
=C1: "X"
=NB: 1
=GOAL: BOARD-STATE0-0
```

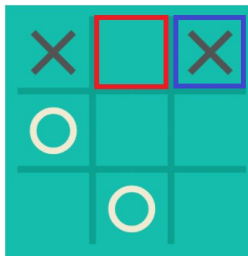
Production

```
(P NO-DIAG1
=GOAL>
STATE SELECT-DIAG1
CURRENTLIGNE 1
- CURRENTCOL 1
CASE1_1 "X"
CASE2_2 "E"
CASE3_3 "E"
==>
=GOAL>
STATE SELECT-DIAG2
)
```

Production Parameters

Parameters for production NO-DIAG1

```
G1:
:utility 0.000
:u 0.000
:at 0.050
```



P-NO-DIAG2

74 Stepper

Step Stop Run Until: Time Tutor Mode

Next Step: 0.675 PROCEDURAL CONFLICT-RESOLUTION

Last Stepped: 0.675 PROCEDURAL PRODUCTION-FIRED NO-DIAG2_1_3

Possible Productions

NO-DIAG2_1_3

Bindings

```
=GOAL: BOARD-STATE0-0
```

Production

```
(P NO-DIAG2_1_3
=GOAL>
STATE SELECT-DIAG2
CURRENTLIGNE 1
- CURRENTCOL 3
==>
=GOAL>
STATE TRY-REMEMBER-MOVE
)
```

Production Parameters

Parameters for production NO-DIAG2_1_3

```
G2_1_3:
:utility 0.000
:u 0.000
:at 0.050
```

74 .buffers1 (TICTACTOE)

Contents Status

```
AURAL
AURAL-LOCATION
GOAL
IMAGINAL
IMAGINAL-ACTION
MANUAL
PRODUCTION
RETRIEVAL
TEMPORAL
VISUAL
VISUAL-LOCATION
VOCAL
```

```
IMAGINAL: CHUNK0-0
CHUNK0-0
LIGNE 212
COL 113
```

TRY-REMEMBER-MOVE-NO-DIAG

7% Stepper

Step	Stop	Run Until:	Time	Tutor Mode
Next Step:	0.725	PROCEDURAL	CLEAR-BUFFER RETRIEVAL	
Last Stepped:	0.725	PROCEDURAL	PRODUCTION-FIRED TRY-REMEMBER-MOVE-NO-D	

Possible Productions

TRY-REMEMBER-MOVE-NO-DIAG

Bindings

=ARG2: 113
=ARG1: 212
=GOAL: BOARD-STATE0-0
=IMAGINAL: CHUNK0-0

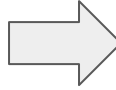
Production

```
(P TRY-REMEMBER-MOVE-NO-DIAG
=GOAL>
  STATE TRY-REMEMBER-MOVE
  - NEXTLIGNE NIL
  - NEXTCOL NIL
=IMAGINAL>
  LIGNE 212
  COL 113
  DIAG1 NIL
  DIAG2 NIL
==>
=IMAGINAL>
+RETRIEVAL>
  LIGNE 212
  COL 113
  DIAG1 NIL
  DIAG2 NIL
  - TYPE NIL
=GOAL>
  STATE REMEMBERING
)
```

Production Parameters

Parameters for production TRY-REMEMBER-MOVE-NO-DIAG:

:utility 0.000
:u 0.000
:at 0.050



CANNOT-REMEMBER-MOVE-FIRST-EMPTY

7% Stepper

Step	Stop	Run Until:	Time	Tutor Mode
Next Step:	1.514	PROCEDURAL	CLEAR-BUFFER IMAGINAL	
Last Stepped:	1.514	PROCEDURAL	PRODUCTION-FIRED CANNOT-REMEMBER-MOVE-F	

Possible Productions

CANNOT-REMEMBER-MOVE-FIRST-EMPTY

Bindings

=COL: 2
=LIG: 1
=GOAL: BOARD-STATE0-0

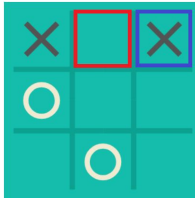
Production

```
(P CANNOT-REMEMBER-MOVE-FIRST-EMPTY
=GOAL>
  STATE REMEMBERING
  FIRSTEMPTYLIG NIL
  FIRSTEMPTYCOL NIL
  CURRENTLIGNE 1
  CURRENTCOL 2
  ?RETRIEVAL>
    BUFFER FAILURE
==>
=GOAL>
  STATE SEARCH-EMPTY
  FIRSTEMPTYLIG 1
  FIRSTEMPTYCOL 2
  -IMAGINAL>
)
)
```

Production Parameters

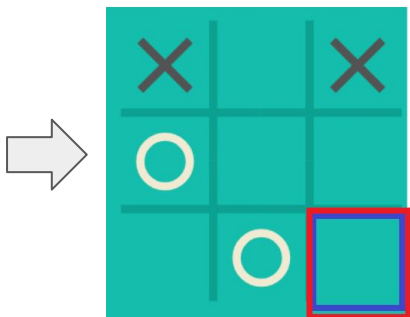
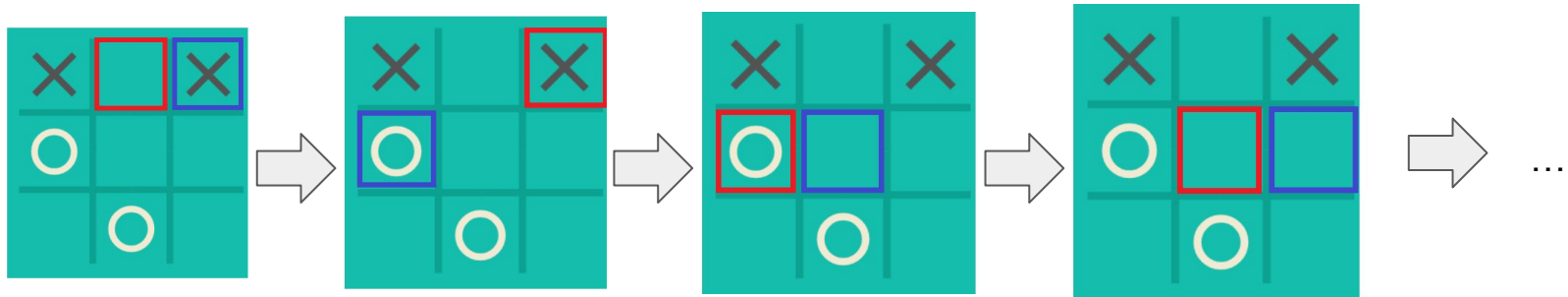
Parameters for production CANNOT-REMEMBER-MOVE-FIRST-EMPTY:

:utility 0.000
:u 0.000
:at 0.050



Scénario 1
Ne se rappelle pas

Continue à chercher des cases vides



Applique stratégie FIRST-EMPTY

 Current

 Next

P-CREATE-DEFAULT-MOVE

74 Stepper

Step	Stop	Run Until:	Time	Tutor Mode
Next Step:		7.938	PROCEDURAL	CONFLICT-RESOLUTION
Last Stepped:		7.938	PROCEDURAL	PRODUCTION-FIRED CREATE-DEFAULT-MOVE

Possible Productions
 CREATE-DEFAULT-MOVE

Bindings
 =VAL2: 2
 =VAL1: 1
 =GOAL: BOARD-STATE0-0

Production

```
(P CREATE-DEFAULT-MOVE
  =GOAL>
    STATE SEARCH-EMPTY
    CURRENTLIGNE 3
    CURRENTCOL 3
    NEXTCOL 3
    NEXTLIGNE 3
    FIRSTEMPTYLIG 1
    FIRSTEMPTYCOL 2
  ==>
  =GOAL>
    STATE CREATE-MOVE
    CURRENTLIGNE 1
    CURRENTCOL 2
    NEXTCOL NIL
    NEXTLIGNE NIL
)
```

Production Parameters
 Parameters for production CREATE-DEFAULT-MOVE:
 :utility 0.000
 :u 0.000
 :at 0.050



P-PLAY-DEFAULT-MOVE

74 Stepper

Step	Stop	Run Until:	Time	Tutor Mode
Next Step:		8.556	PROCEDURAL	CLEAR-BUFFER MANUAL
Last Stepped:		8.556	PROCEDURAL	PRODUCTION-FIRED PLAY-DEFAULT-MOVE

Possible Productions
 PLAY-DEFAULT-MOVE

Bindings
 =VAL2: 2
 =VAL1: 1
 =GOAL: BOARD-STATE0-0

Production

```
(P PLAY-DEFAULT-MOVE
  =GOAL>
    STATE TRY-REMEMBER-MOVE
    NEXTCOL NIL
    NEXTLIGNE NIL
    FIRSTEMPTYLIG 1
    FIRSTEMPTYCOL 2
  ?MANUAL>
    STATE FREE
  ==>
  =GOAL>
    STATE PLAYING
  +MANUAL>
    CMD PRESS-KEY
    KEY "a"
)
```

Production Parameters
 Parameters for production PLAY-DEFAULT-MOVE:
 :utility 0.000
 :u 0.000
 :at 0.050

GOAL-MODIFICATION

74 .buffers2 (TICTACTOE)

	Contents	Status
AURAL		
AURAL-LOCATION		
GOAL	GOAL: BOARD-STATE0-0	
IMAGINAL	BOARD-STATE0-0	
IMAGINAL-ACTION	STATE "finish"	
MANUAL	CASE1_1 "X"	
PRODUCTION	CASE1_2 "E"	
RETRIEVAL	CASE1_3 "X"	
TEMPORAL	CASE2_1 "O"	
VISUAL	CASE2_2 "E"	
VISUAL-LOCATION	CASE2_3 "E"	
VOCAL	CASE3_1 "E"	
	CASE3_2 "O"	
	CASE3_3 "E"	
	PREVLIGNE 1	
	PREVCOL 2	
	FIRSTEMPTYLIG 1	
	FIRSTEMPTYCOL 2	
	GOODANSWERLIG 1	
	GOODANSWERCOL 2	
	TYPE-MOVE "gagnant"	



P-MEMORIZE-WIN-DEFAULT

Step	Stop	Run Until:	Time	8.8	Tutor Mode
Next Step:	8.908	PROCEDURAL	CLEAR-BUFFER	IMAGINAL	
Last Stepped:	8.908	PROCEDURAL	PRODUCTION-FIRED	MEMORIZE-WIN-DEFAULT	
Possible Productions			Bindings		
MEMORIZE-WIN-DEFAULT			=B: 2 =A: 1 =VAL: "gagnant" =GOAL: BOARD-STATE0-0 =IMAGINAL: CHUNK5-0		
Production Parameters			Production		
Parameters for production MEMORI			(P MEMORIZE-WIN-DEFAULT =GOAL> STATE "finish" TYPE-MOVE "gagnant" GOODANSWERLIG 1 GOODANSWERCOL 2 FIRSTEMPTYLIG 1 FIRSTEMPTYCOL 2 NEXTCOL NIL NEXTLIGNE NIL =IMAGINAL> TYPE NIL ?MANUAL> STATE FREE ==> =IMAGINAL> TYPE "gagnant" -IMAGINAL> =GOAL> STATE FINISH +MANUAL> CMD PRESS-KEY KEY "h")		
ZE-WIN-DEFAULT: :utility 0.000 :u 0.000 :at 0.050					

P-TRY-REMEMBER-MOVE-NO-DIAG

74 Stepper

Step Stop Run Until: Time Tutor Mode

Next Step: 1.123 PROCEDURAL CLEAR-BUFFER RETRIEVAL

Last Stepped: 1.123 PROCEDURAL PRODUCTION-FIRED TRY-REMEMBER-MOVE-NO-DIAG

Possible Productions

TRY-REMEMBER-MOVE-NO-DIAG

Bindings

```
=ARG2: 113
=ARG1: 212
=GOAL: BOARD-STATE0-0
=IMAGINAL: CHUNK0-0
```

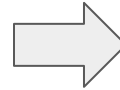
Production

```
(P TRY-REMEMBER-MOVE-NO-DIAG
=GOAL>
STATE TRY-REMEMBER-MOVE
- NEXTLIGNE NIL
- NEXTCOL NIL
=IMAGINAL>
LIGNE 212
COL 113
DIAG1 NIL
DIAG2 NIL
==>
=IMAGINAL>
+RETRIEVAL>
LIGNE 212
COL 113
DIAG1 NIL
DIAG2 NIL
- TYPE NIL
=GOAL>
STATE REMEMBERING
```

Production Parameters

Parameters for production TRY-REMEMBER-MOVE-NO-DIAG:

```
:utility 0.000
:u 0.000
:at 0.050
```



74 Stepper

Step Stop Run Until: Time 8.8 Tutor Mode

Next Step: 10.275 DECLARATIVE SET-BUFFER-CHUNK RETRIEVAL CHUNK5-0

Last Stepped: 10.275 DECLARATIVE RETRIEVED-CHUNK CHUNK5-0

Possible Chunks

CHUNK5-0

Retrieval Request

```
+retrieval>
LIGNE 212
COL 113
DIAG1 NIL
DIAG2 NIL
- TYPE NIL
```

Chunk

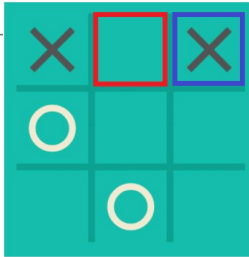
CHUNK5-0

```
LIGNE 212
COL 113
TYPE "gagnant"
```

Chunk Parameters

Declarative parameters for chunk CHUNK5-0:

```
:Activation 0.537
:Permanent-Noise 0.000
:Base-Level 0.537
:Creation-Time 8.908
:Reference-Count 1
:Last-Retrieval-Activation 0.5
69
:Last-Retrieval-Time 10.218
```



Scénario 2
On se rappelle

P-REMEMBER-MOVE-NO-DIAG

74 Stepper

StepStopRun Until:Time8.8Tutor Mode

Next Step:10.325PROCEDURALCLEAR-BUFFER RETRIEVAL

Last Stepped:10.325PROCEDURALPRODUCTION-FIRED REMEMBER-MOVE-NO-DIAG

Possible Productions

REMEMBER-MOVE-NO-DIAG

Bindings

=ARG5: "gagnant"

=ARG2: 113

=ARG1: 212

=GOAL: BOARD-STATE0-0

=RETRIEVAL: CHUNK5-0-0

=IMAGINAL: CHUNK6-0

Production

(P REMEMBER-MOVE-NO-DIAG

=GOAL>

STATE REMEMBERING

=RETRIEVAL>

LIGNE 212

COL 113

DIAG1 NIL

DIAG2 NIL

TYPE "gagnant"

- TYPE "lose"

?MANUAL>

STATE FREE

=IMAGINAL>

==>

=IMAGINAL>

LIGNE 212

COL 113

DIAG1 NIL

DIAG2 NIL

TYPE "gagnant"

+MANUAL>

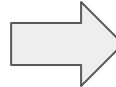
CMD PRESS-KEY

KEY "a"

)

Production Parameters

Parameters for production REMEMB
ER-MOVE-NO-DIAG:
:utility 0.000
:u 0.000
:at 0.050



P-MEMORIZE-WIN-REMEMBER2

74 Stepper

StepStopRun Until:Time8.8Tutor Mode

Next Step:10.675PROCEDURALCLEAR-BUFFER IMAGINAL

Last Stepped:10.675PROCEDURALPRODUCTION-FIRED MEMORIZE-WIN-REMEMBER2

Possible Productions

MEMORIZE-WIN-REMEMBER2

Bindings

=GOAL: BOARD-STATE0-0

=IMAGINAL: CHUNK6-0

Production

(P MEMORIZE-WIN-REMEMBER2

=GOAL>

STATE "finish"

=IMAGINAL>

TYPE "gagnant"

?MANUAL>

STATE FREE

==>

-IMAGINAL>

=GOAL>

STATE FINISH

+MANUAL>

CMD PRESS-KEY

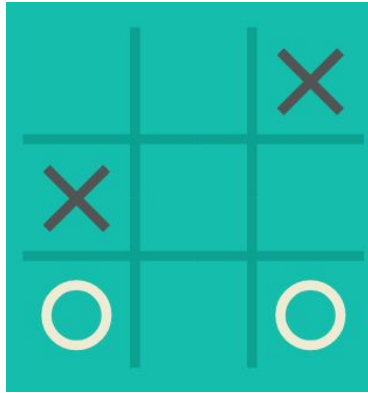
KEY "w"

)

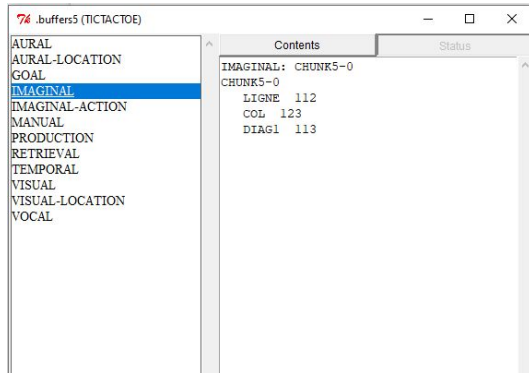
Production Parameters

Parameters for production MEMORI
ZE-WIN-REMEMBER2:
:utility 0.000
:u 0.000
:at 0.050

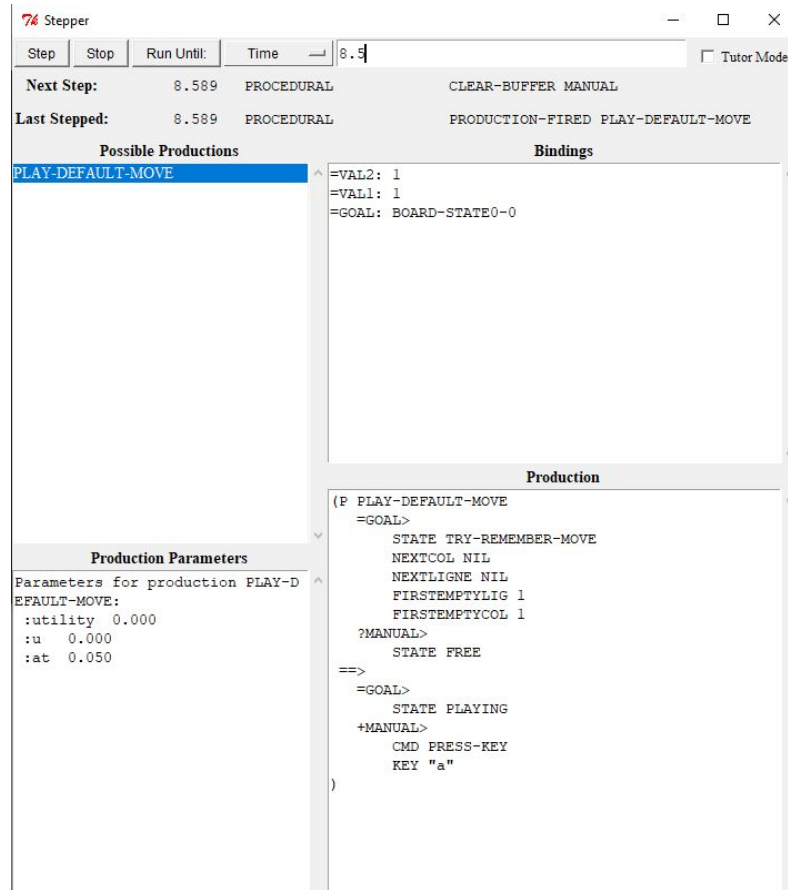
Coup Perdant



buffer Imaginal



P-PLAY-DEFAULT-MOVE



Goal buffer

74 .buffers5 (TICTACTOE)

AURAL

AURAL-LOCATION

GOAL

IMAGINAL

IMAGINAL-ACTION

MANUAL

PRODUCTION

RETRIEVAL

TEMPORAL

VISUAL

VISUAL-LOCATION

VOCAL

Contents

Status

GOAL: BOARD-STATE0-0
BOARD-STATE0-0
STATE "finish"
CASE1_1 "E"
CASE1_2 "E"
CASE1_3 "X"
CASE2_1 "X"
CASE2_2 "E"
CASE2_3 "E"
CASE3_1 "O"
CASE3_2 "E"
CASE3_3 "O"
CURRENTLIGNE 1
CURRENTCOL 1

FIRSTEMPTYLIG 1
FIRSTEMPTYCOL 1
GOODANSWERLIG 3
GOODANSWERCOL 2
TYPE-MOVE "bloquant"

P-MEMORIZE-LOSE-COL

74 Stepper

Step Stop Run Until Time 8.5 Tutor Mode

Next Step: 8.939 PROCEDURAL CLEAR-BUFFER IMAGINAL

Last Stepped: 8.939 PROCEDURAL PRODUCTION-FIRED MEMORIZE-LOSE-COL

Possible Productions

Bindings

Production

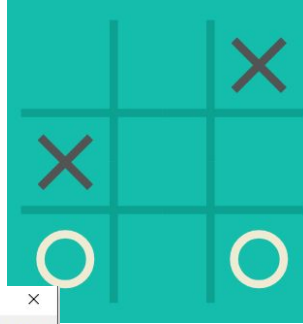
Production Parameters

MEMORIZE-LOSE-COL

=ARG1: 2
=VAL: "bloquant"
=GOAL: BOARD-STATE0-0
=IMAGINAL: CHUNK5-0

(P MEMORIZE-LOSE-COL
=GOAL>
STATE "finish"
TYPE-MOVE "bloquant"
GOODANSWERCOL 2
- FIRSTEMPTYCOL 2
=IMAGINAL>
TYPE NIL
==>
=IMAGINAL>
TYPE "lose"
-IMAGINAL>
=GOAL>
STATE FINISH
)

Parameters for production MEMORI
ZE-LOSE-COL:
:utility 0.000
:u 0.000
:at 0.050



Apprentissage

1er méthode:

- Génération plateau.
- Présentation au modèle.

Le modèle apprend les coups gagnants et bloquants.

(run-blocks 50 20)

Apprentissage

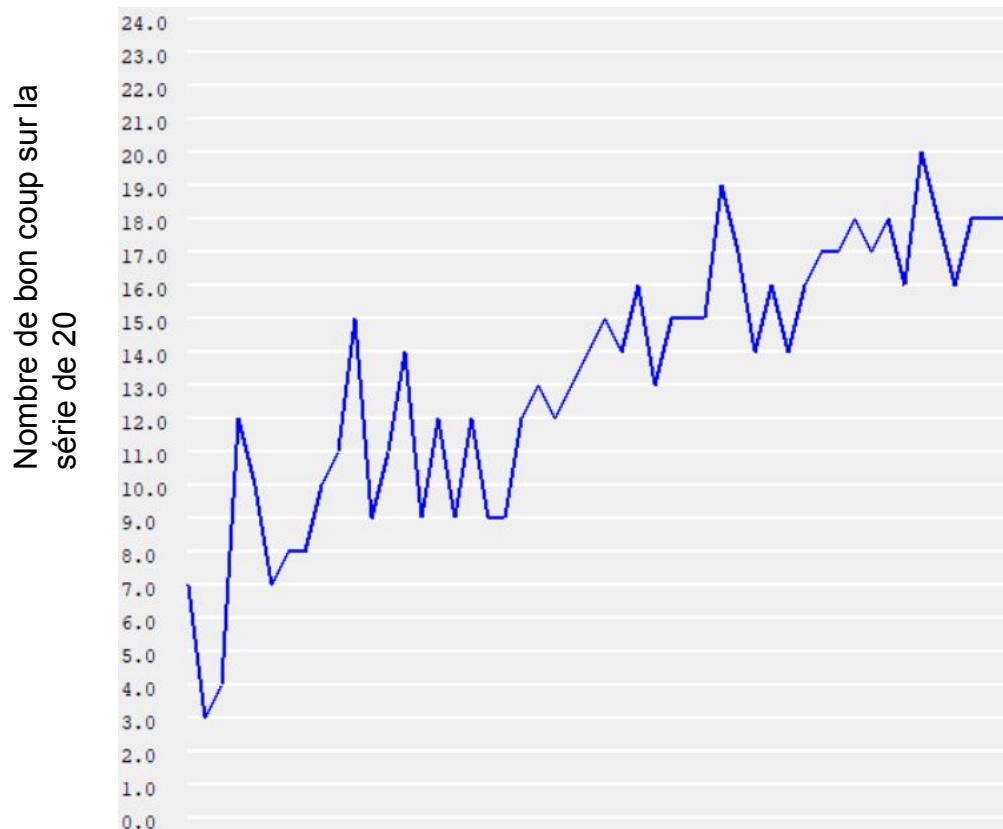
2è méthode:

- Génération plateau.
- Présentation au modèle.

Le modèle apprend les coups gagnants, bloquant mais aussi les mauvais coups

(run-blocks 50 20)

Evolution des performances du modèle

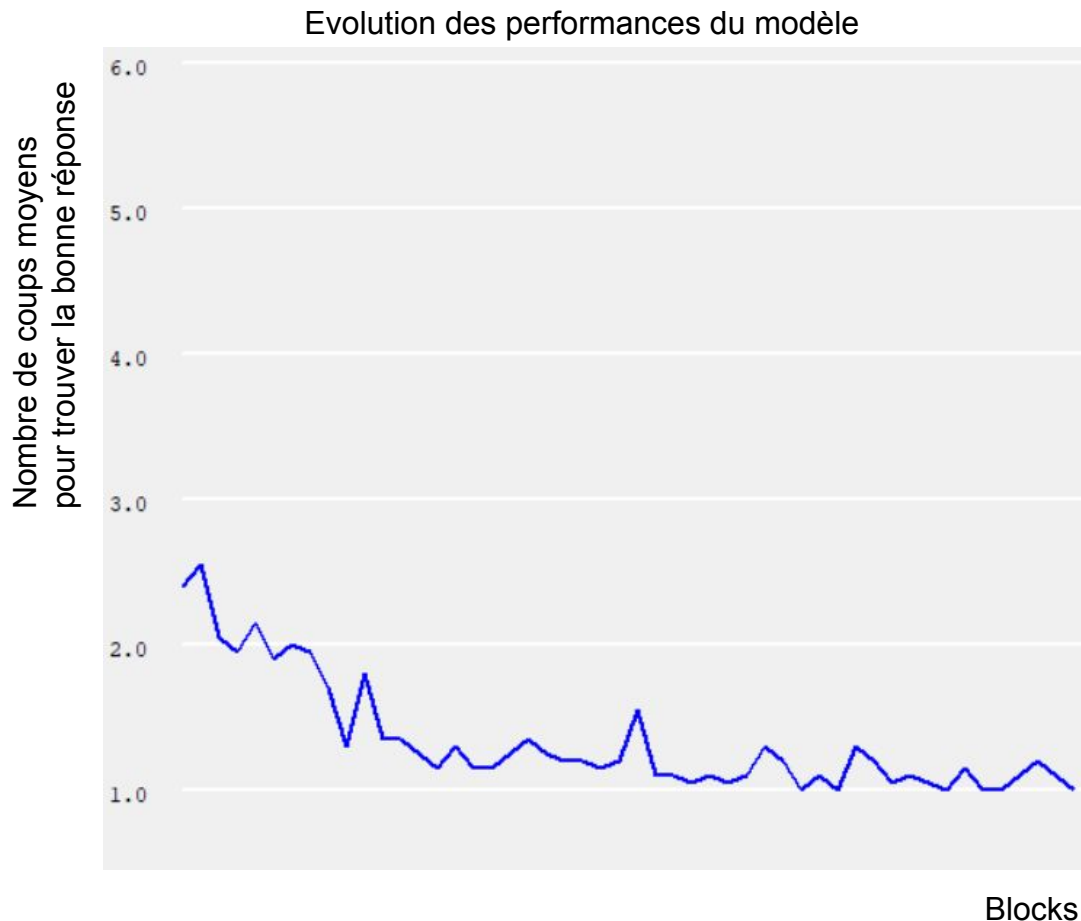


Apprentissage

3è méthode:

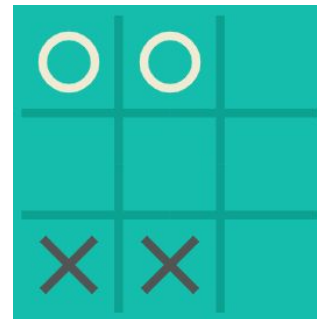
- Génération plateau.
- Présentation au modèle.
- Bon coup : nouveau plateau.
- Mauvais coup : même plateau.

(run-blocks 50 20)



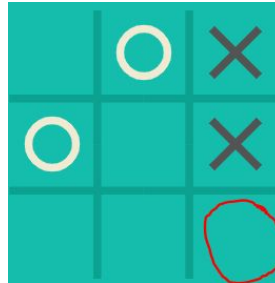
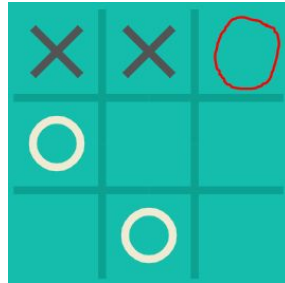
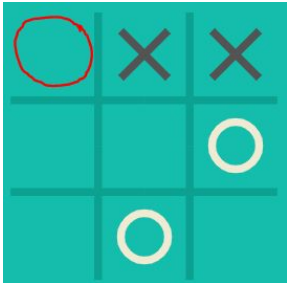
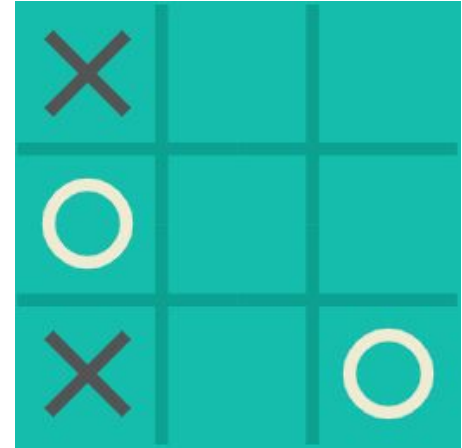
Limites du modèle

- Le modèle ne fonctionne pas sur les configurations à deux coups possibles.
- Le modèle semble un peu lourd (1000 lignes d'ACT-R, chunk goal à 19 slots).
- Le modèle est très spécifique.



Extensions possibles

- Plusieurs cas en même temps.
- Victoire au prochain tour.
- Réduire la taille du code/ le nombre de règles de production.
- Prendre en compte la symétrie.



Questions ?