ABCD-ring

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Introduction

We going to demonstrate the workflow of RKappa package. ## Model definition

Agent definition

%agent: A(a,b,c) %agent: B(a,b,d) %agent: C(a,d) %agent: D(b,c)

Appendix

Custom Functions

```
## Custom functions used in the analysis should go into this chunk.
## They will be listed in their own section of the appendix.
makeSiteGraph<-function(kp){
  edges<-list()
  agents<-list()
  agmarks<-list()
  g <- graph.empty(n = 0, directed =FALSE)
  cl<-colors()
  vcl<-list()
  idx<-0
  subg<-0
  #kp<-triskelia
  subg<-subg+1
  k<-sub('\\)$','',kp)
  unlist(strsplit(k,'),',fixed=TRUE))->parts
  strs<-lapply(strsplit(parts,'[(,]'),function(x) strsplit(x,'!'))
  for(i in 1:length(strs)){
    idx<-idx+1
    n<-strs[[i]][[1]]
    nname=paste(n,idx,sep='_')
    agmarks[[nname]]<-idx
    nidx<-idx
    if(!(n %in% names(vcl))){
      vcl[[n]]<-colors()[8+length(vcl)*3]
    }
    if(!(n %in% names(agents))){
      agents[[n]]<-list()
    }
    g<-add.vertices(g,1,attr=list(name=n,name2=nname,color=vcl[[n]],type='agent',size=30))
    for(j in 2:length(strs[[i]])){
```

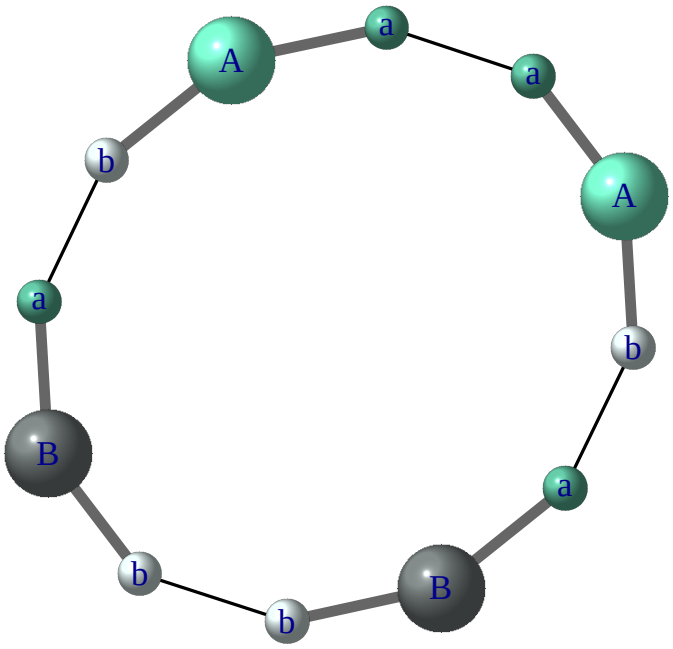

Figure 1: 1 AB2 observable structure

```
      s<-strs[[i]][[j]][1]
      if(!(s %in% names(agents[[n]]))){
        agents[[n]][[s]]<-list()
      }
      if(!(s %in% names(vcl))){
        vcl[[s]]<-colors()[8+length(vcl)*3]
      }
      idx<-idx+1
      agmarks[[nname]]<-c(agmarks[[nname]],idx)
      g<-add.vertices(g,1,attr=list(name=s,name2=paste0('site_',s),color=vcl[[s]],type='site',size=15))
      g<-add.edges(g,c(nidx,idx),type='site',weight=10,color='grey40',width=10)
      if(length(strs[[i]][[j]])>1){
        agents[[n]][[s]]<-append(agents[[n]][[s]],strs[[i]][[j]][2])
        e<-paste(strs[[i]][[j]][2],subg,sep='_')
        if(e %in% names(edges)){
          g<-add.edges(g,c(edges[[e]],idx),type='bond',weight=1,color='black',width=3)
        }else{
          edges[e]<-idx
        }
      }
    }
  }
  g$marks<-agmarks
  return(g)
}
```

Configuration

```
## This chunk should contain global configuration commands.
## Use this to set knitr options and related things. Everything
## in this chunk will be included in an appendix to document the
## configuration used.
output <- opts_knit$get("rmarkdown.pandoc.to")

## By default R code is only included in HTML versions of the report
## (where it can be collapsed). You can generate a PDF version
## using rmarkdown::pdf_document to get a copy for print. Extensive
## chunks of R code may or may not be desired in that setting. If you
## want them simply change the following arguments to `echo = TRUE`.
## In either case the default can be overwritten for individual chunks.
opts_chunk$set(echo = TRUE)
opts_chunk$set(warning = output=="html")
opts_chunk$set(message = output=="html")

## Cache options
opts_chunk$set(cache=TRUE)

## Figure options
## Set default figure format
options(reportmd.figure.format=params$format)

## Set 'hide.fig.code' to FALSE to include code chunks that
## produce Figures in the output. Note that this affects all chunks
## that provide a figure caption.
opts_chunk$set(hold=TRUE, hide.fig.code=TRUE)

## Set up default plotting options for different formats.
## These can be overwritten for individual chunks
interactiveFig()
screenFig()
printFig(dpi=900)

## Pander options
panderOptions("digits", 3)
panderOptions("table.split.table", 160)

## Configure Figure and Table lables
options(figcap.prefix = "", figcap.sep = "", figcap.prefix.highlight = "")
options(tabcap.prefix = "Table", tabcap.sep = ":", tabcap.prefix.highlight = "**")

## Install required knitr hooks
installHooks()
```

Session Info

- **platform**:
  - **version**: R version 3.2.4 (2016-03-10)
  - **system**: x86_64, darwin13.4.0

  - **ui**: X11
  - **language**: (EN)
  - **collate**: en_US.UTF-8
  - **tz**: Europe/Minsk
  - **date**: 2016-07-20

- **packages**:

package	*	version	date	source
assertthat		0.1	2013-12-06	CRAN (R 3.2.0)
base64enc		0.1-3	2015-07-28	CRAN (R 3.2.0)
codetools		0.2-14	2015-07-15	CRAN (R 3.2.4)
colorspace		1.2-6	2015-03-11	CRAN (R 3.2.0)
devtools		1.12.0	2016-06-24	CRAN (R 3.2.5)
digest		0.6.9	2016-01-08	CRAN (R 3.2.2)
evaluate		0.9	2016-04-29	CRAN (R 3.2.5)
formatR		1.4	2016-05-09	CRAN (R 3.2.5)
futile.logger	*	1.4.3	2016-07-10	CRAN (R 3.2.5)
futile.options		1.0.0	2010-04-06	CRAN (R 3.2.2)
gdata	*	2.17.0	2015-07-04	CRAN (R 3.2.2)
ggplot2	*	2.1.0	2016-03-01	CRAN (R 3.2.4)
gridExtra		2.2.1	2016-02-29	CRAN (R 3.2.4)
gtable		0.2.0	2016-02-26	CRAN (R 3.2.3)
gtools		3.5.0	2015-05-29	CRAN (R 3.2.2)
htmltools		0.3.5	2016-03-21	CRAN (R 3.2.4)
htmlwidgets		0.6	2016-02-25	CRAN (R 3.2.3)
httr		1.2.1	2016-07-03	cran (@1.2.1)
igraph	*	1.0.1	2015-06-26	CRAN (R 3.2.2)
jsonlite		1.0	2016-07-01	cran (@1.0)
knitr	*	1.13	2016-05-09	CRAN (R 3.2.4)
lambda.r		1.1.9	2016-07-10	CRAN (R 3.2.5)
magrittr		1.5	2014-11-22	CRAN (R 3.2.2)
memoise		1.0.0	2016-01-29	CRAN (R 3.2.2)
munsell		0.4.3	2016-02-13	CRAN (R 3.2.2)
pander	*	0.6.0	2015-11-23	CRAN (R 3.2.2)
plotly	*	3.6.0	2016-05-18	cran (@3.6.0)
plyr	*	1.8.4	2016-06-08	CRAN (R 3.2.5)
R6		2.1.2	2016-01-26	CRAN (R 3.2.2)
randtoolbox	*	1.17	2015-07-30	CRAN (R 3.2.2)
Rcpp		0.12.5	2016-05-14	CRAN (R 3.2.5)
reportMD	*	0.1.0	2016-07-16	Github (humburg/reportMD@649dea7)
rkappa	*	1.1.160502	2016-05-07	local
rmarkdown		1.0.2	2016-07-16	Github (rstudio/rmarkdown@b65e177)
rngWELL	*	0.10-4	2015-07-27	CRAN (R 3.2.2)
scales		0.4.0	2016-02-26	CRAN (R 3.2.3)
stringi		1.1.1	2016-05-27	CRAN (R 3.2.5)
stringr		1.0.0	2015-04-30	CRAN (R 3.2.2)
tibble		1.1	2016-07-04	CRAN (R 3.2.5)
tidyr		0.5.1	2016-06-14	CRAN (R 3.2.5)
viridis		0.3.4	2016-03-12	cran (@0.3.4)
withr		1.0.2	2016-06-20	CRAN (R 3.2.5)
xml2		1.0.0	2016-06-24	CRAN (R 3.2.5)

package	*	version	date	source
yaml		2.1.13	2014-06-12	CRAN (R 3.2.2)