





Clever System GroupScan &SocialScan











Illustration



Outline

●硬體需求
●影像分析
●操作步驟
■ GroupScan
■ SocialScan
■檔案管理



■ 攝影機

- 影像擷取: DV or CCD camera
- 影片格式: MPEG file
- 解析度: 352*240 or 640*480
- ■攝像率: 30 frames/sec NTSC

■ 電腦

- MS Windows XP或MS Windows 2000
- CPU: Pentium 4 Processor以上
- RAM: 1GB以上
- HD: 80G以上



Photo-beams Video tracking Behavior recognition







Clever: Video tracking + Behavior recognition

Clever system

Video tracking + Behavior Recognition

- full body (shape, color)
- body parts (head, tail, forelimbs, hind limbs, abdomen, upper/lower back, ear, etc.)
- Color form, without body marking





GroupScan

- Options:
 - Basic
 - Real-time
 - High-throughput [6 tubes, 96 cell with 1 animal/arena]
 - RH





Illustration









GroupScan

分析一群動物在一個區域中的平均行為
Ex.果蠅,蜜蜂,斑馬魚,大/小鼠...

	傳統可測得參數	新增參數
GroupScan	N/A	可以测得下列参数:
群體行為偵測套組		•可清楚看見動物的最大數量
		(MaxVisibCount) >
		•目前可清楚看見動物的數量
		(CurVisibCount) >
		•分析過程中活動動物的最大數量
		(MaxLiveCount) >
		•目前活動動物的數量(CurLiveCoun
		●平均速度(Total AvSpeed)、
		● 活動動物的平均速度(Active
		AvSpeed) •

GroupScan軟體操作步驟 1. 選擇要分析的影像檔案 2. 設定實驗區(Arena)數目 3. 設定實驗區(Arena)範圍、區塊(Zone)範圍、面積區域 (Area)命名、及距離校正 4. 設定事件(Event)準則及偵測分析準則 5. 開始影像分析 6. 結果儲存&輸出 7. 結果視算

軟體操作介面

System Data Trial Arena Visualization View Help

	1 .	5-2	1			8 2 3		Live Cou	nt Event						
	1000	A	1					Arena	ID	From	To	Length	Co	unt	*
8988	1		1000					1	1	2	4159	4157		5	
4'50"					100			1	2	4159	8791	4632		4	
4 39		•	-					1	3	8791	8814	23		3	
8987	1000	1000						1	4	8814	8987	173		2	=
4'59"	and the second second		-			1.000		2	2	3854	8373	4519		6	
	and the second							2	3	8373	8399	26		5	
Cropping	4							2	4	8399	8987	588		4	
tom 40				4				3	1	2	8986	8984		14	
								3	2	8986	8987	1		13	
			1. 10					4	2	0.001	8981	8979		4	
		and the second second	1000	an all	The I	10000		V	2	0901	0903			3	*
Illustratio	on							Event De	tected						
Setting	- 1 A		•					Arena	ID	From	То	Length	Event		
				4											
tion	8	5			6.	Arena 5									
Trace															
Debug		•	•												
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nt 5 frame		, °		A											
ormat • Frame		, ~ ⁰	ľ	A											
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5 frame mat Frame rowsing Arena St	atus		8	A											
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5 frame mat • Frame Browsing Arena St Arena St Arena 1 2 3 4 5 6	atus State Stop Stop Stop Stop Stop Stop	Start 1 1 1 1 1 1	Stop 8987 8987 8987 8987 8987 8987	A Duration 8986 8986 8986 8986 8986 8986 8986	MaxVisibCount 5 7 15 6 5 2	CurVisibCount 2 6 14 4 4 2	MaxLive	Count C 5 7 14 4 4 1	urLiveC	ount C 2 4 13 2 2 0	CurStatCount C 1 2 2 2 2 2	t Total J 0 0. 2 0. 1 13. 2 0. 2 0. 2 0.	AvSpeed Active .373695 .166500 .179319 2 .235059 .000000 .499501	AvSpee 1.11898 0.00000 3.70617 0.00000 0.00000 0.00000	1 7 0 3 0 0
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1. 選擇要分析的影像

兩種方式將影片開啟:
 1. 2. "Open Video For Trial Running"



選擇要分析的影片檔並
 開啟



2. 設定實驗區(Arena)數目

"Set Arena Num"

GroupScan - Group	Animal	Behavior Analyz	zing System
System Data Trial	Arena	Visualization	View Help
<i>6</i> 🕲 🕲 •	→ Se	et Arena Num	
Video: FliesTube6.MPG	Er	nter Arena Desig	jn Mode
0 898	In	sert Zone	•
	In	sert Side	•
00:00:00 4'59	In	sert Point	
Frame 281	Sa	ave Arena Profile	e
Time 9'	Lo	oad Arena Profil	e
-Video Window Cropping	Co	onvert RealTime	Arena Profile



■ 輸入實驗區數目

3-1. 設定實驗區(Arena)及區塊(Zone)範圍



3-1. 設定實驗區(Arena)及區塊(Zone)範圍

■ 依實驗區形狀選擇工具



■ Ex. 選擇Polygon())鍵來 點選實驗區的範圍



3-1. 設定實驗區(Arena)及區塊(Zone)範圍

按滑鼠右鍵,點選 "Finish Zone Operation"

■ 再按一次右鍵出現之選項



 Move Up

 Move Down

 Move To Top

 Move To Bottom

 Change Zone Color

 Modify Zone

 Save Zone

 Split QuadLateral

 Copy Zone

 Paste Zone

 Delete Zone

3-2. 面積區域(Area)命名



3-3. 距離校正(Calibration)

"Calibration"



3-4. 實驗區設定完成&儲存

■ 設定完成, 點"Finish"

"Save Arena Profile": 實驗區設定存成.GCG檔案
"Load Arena Profile": 檔案輸入



4. 設定事件(Event)準則及偵測分析準則

"System Settings"



4-1. System Settings-Common Settings

1. Interframe matching:

Se	ttings	×
	General System Event Detector Start Rules Stop Rules TTL Pin Out Rules Statistics Result Rules - Common Settings	
	Interframe Matching: MaxDist 10 pixel Speed Weight 1 Default	
	ReMatch After Disappear 1 frames	

- <u>MaxDist</u>:
- <u>Speed Weight</u> (w):
- <u>ReMatch after Disappear</u>:

4-1. System Settings-Common Settings

Active Motion	30 Frame Motion >	4 mm Seperate Threshold (pix): [4]
Speed Calculation:	Frame Disp: 30	
Estimation	🔿 Dead Zone 🛛 💿 Same	C Ratio 0
Live	Active Value > 1	Active Value Decrease 0.005 every frame

2. Active Motion:30 Frames Motion > 4mm:

Separate Threshold:

3. Speed Calculation:

4-1. System Settings-Common Settings

A	ctive Motion	30 Frame Motion >	4 mm Seperate Threshold (pix):
S	peed Calculation:	Frame Disp: 30	
E	stimation	C Dead Zone 🛛 💿 Same	C Ratio 0
L	∠ive	Active Value > 1	Active Value Decrease 0.005 every frame

4. Estimation:Dead Zone:

Same:

Ratio: -Ratio = 0 → "Dead Zone" mode; -Ratio = 1 → "Same" mode.

5. Live:

4-1. System Settings-Arena Specific Settings

⊢ ^{Arena Specific}	Settings	
Current	1	Set To Default Setting Apply To All Arenas
Object Color:	Darker Than Background C Lighter Than Background	Grey Level Threshold: 🔿 Automatic O Static 40
Object Size:	Minimum 10 (Pixels) Maximum 2000 (Pixels)	© Dynamic 60 Set Animal Number: 20

6. Gray Level Threshold:

7. Set Animal Number: 設定每一區域的動物 數目.

4-2. Start Rules & Stop Rules

Start Rules: At Time
Stop Rules: At Time or Duration



Time At Rule 🛛 🔀	Time Duration Rule	×
After System Running 5 seconds	After Analyzing Duration 5 second:	3
OK Cancel	OK Cancel	

4-3. 儲存事件統計準則設定

 "Save Arena Profile":
 將所有設定儲存
 成.GCG檔案,<u>和實驗</u>
 區設定存成同一個檔 案。



Video: FliesTube6.MPG	
0 8988	5. 影像分析
00:00:00 4'59"	
Frame 8987	
Time 4'59"	- 調整視窗中動態影像要觀察的位置
Video Window Cropping Top 100 Bottom 40 Left 0 Right 0	勾選標示: Labol:標子山動物的標準及動物重於位署
Adjust	Trace:移動動跡
Analyze Setting	Border:標示區塊邊緣
🔽 Arena	Debug:除錯功能
Display Option Label V Trace Border Debug	Arena Side:實驗區範圍邊緣標示
UpdateEvent 5 frame	• 事件及其他顯示是否要即時呈現
Time Format Time © Frame	時間形式
Play from to	• 跳至設定範圍內的畫面進行播放
Result Reset Event Bin Save Export Log In	將結果儲存、輸入、輸出及將依屬性做歸納

開始分析

■ 勾選"Analyze",按 下Pla)鍵開始分析



分析結果

🕵 GroupScan - Group Animal Behavior Analyzing System

System Data Trial Arena Visualization View Help

	1 8	0			F1 C	8 2 3	Live	Count Event	1				
	1000	2	4				Ar	ena ID	From	To	Length	Cou	nt
8988	1		10				1	1	2	2 4159	4157		5
4'59"							1	2	4159	8791	4632		4
	1.1	•	*			A CONTRACTOR	1	3	8791	L 8814 1 8987	23		2
7						0	2	1	2	2 3854	3852		7
59"	-						2	2	3854	8373	4519		6
	100	. 4					2	3	8373	8399	26		5
							2	4	8395	8987	8984		4
							3	2	8986	5 8987	1		13
						1000	4	1	2	2 8981	8979		4
		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	1	to all	The little	and the second second	4	2	8981	L 8985	4		3
Illustr	ation						Eve	nt Detected					
			9		¥* 🭊	<u> </u>	Ar	ena ID	From	To	Length	Event	
		•											
	\$	2			4	Arena 5							
					- 4								
			•										
		0											
ame		<u>,</u>											
				A		4							
me													
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												1	
e Arena	Status												
e Arena	a Status	Start	Stop	Duration	MaxVisibCount	CurVisibCount	MaxLiveCount	CurLive	Count	CurStatCount	Total A	AvSpeed Active 1	AvSpeed
Arena Arena 1	a Status Ma State Stop	Start 1	Stop 8987	Duration 8986	MaxVisibCount	CurVisibCount	MaxLiveCount	: CurLive	Count 2	CurStatCount	Total A	AvSpeed Active A	AvSpeed
Arena Arena 1 2	a Status la State Stop Stop	Start 1	Stop 8987 8987	Duration 8986 8986	MaxVisibCount 5 7	CurVisibCount 2 6	MaxLiveCount	CurLive	Count 2 4	CurStatCount (2	Total A 0 0. 2 0.	AvSpeed Active 1 .373695 4.	AvSpeed 118987
me Arena Arena 1 2 3in 3	a Status na State Stop Stop Stop Stop	Start 1 1 1	Stop 8987 8987 8987	Duration 8986 8986 8986	MaxVisibCount 5 7 15	CurVisibCount 2 6 14	MaxLiveCount	CurLive	Count 2 4 13	CurStatCount 2 1	Total A 0 0. 2 0. 13.	AvSpeed Active A .373695 4 .166500 0 .179319 28	AvSpeed 118987 000000 706173
me Arena Arena Bin 3 4	a Status Ma State Stop Stop Stop Stop Stop	Start 1 1 1 1 1	Stop 8987 8987 8987 8987 8987	Duration 8986 8986 8986 8986 8986	MaxVisibCount 5 7 15 6	CurVisibCount 2 6 14 4	MaxLiveCount	CurLive	Count 2 4 13 2	CurStatCount (2 1	Total P 0 0. 2 0. 13. 0. 2 0.	AvSpeed Active A .373695 4 .166500 0 .179319 28 .235059 0	AvSpeed 118987 000000 .706173 .000000
e Arena Arena 1 2 3 4 5	a Status Ia State Stop Stop Stop Stop Stop	Start 1 1 1 1 1 1	Stop 8987 8987 8987 8987 8987 8987	Duration 8986 8986 8986 8986 8986 8986	MaxVisibCount 5 7 15 6 5	CurVisibCount 2 6 14 4	MaxLiveCount	CurLive	Count 2 4 13 2 2	CurStatCount (1 2 2	Total P 0 0. 2 0. 13. 0. 2 0. 2 0.	AvSpeed Active A .373695 4 .166500 0 .179319 28 .235059 0 .000000 0	AvSpeed 118987 000000 706173 000000
rame ing Aren Aren 1 2 Bin 3 	a Status La State Stop Stop Stop Stop Stop	Start 1 1 1 1 1 1 1 1	Stop 8987 8987 8987 8987 8987 8987 8987	Duration 8986 8986 8986 8986 8986 8986 8986	MaxVisibCount 5 7 15 6 5 2	CurVisibCount 2 6 14 4 4 2	MaxLiveCount 5 14 4 4	CurLive	Count 2 4 13 2 2 0	CurStatCount (2 1 2 2 2	Total P 0 0. 2 0. 13. 2 0. 2 0. 2 0.	AvSpeed Active J .373695 4. .166500 0. .179319 28. .235059 0. .000000 0. .499501 0.	AvSpeed 118987 000000 706173 000000 000000 000000
rowsing rowsing Vent Bin Log In Log In Log In	a Status La State Stop Stop Stop Stop Stop	Start 1 1 1 1 1 1 1	Stop 8987 8987 8987 8987 8987 8987 8987	Duration 8986 8986 8986 8986 8986 8986 8986	MaxVisibCount 5 7 15 6 5 2	CurVisibCount 2 6 14 4 4 2	MaxLiveCount	CurLive	Count 2 4 13 2 2 0	CurStatCount 2 1 2 2 2	Total A 0 0. 2 0. 1 13. 2 0. 2 0. 2 0.	AvSpeed Active J .373695 4 .166500 0 .179319 28 .235059 0 .000000 0 .499501 0	AvSpeed 118987 000000 706173 000000 000000 000000

6-1. 結果儲存 (Result Save)

• "Save": 將分析結果依各實驗區儲存成.TCR, .EVT, .SPD, .LIV檔

R	esult
Reset	Event Bin
Save E:	kport Log In

Result Handling Options
Video Information
Width: 640 Height: 480 FrameRate 29.97 frame/s
Result Option
Select Arena 📋 💌
FrameCalc 0 From -1 To -1
Results: 🔽 Trace 🔽 Event 🔽 Speed 🔽 Live
OK Cancel

	6-2. 結果輸出 (Result Export)											
	I	"Exp	oort": 自	動分區轉	输出成	Excel _椿	É E					
			Reset	Event Bin	Res W S F	ult Handling Optic idth: 640 Heig elect Arena FrameCalc 89 Results: V Trac Ok	vins Video Infor tt: 480 Result Op 87 From 87 From	mation FrameH otion n ent Can	Rate 29.97 frame/s To 8987 Speed V Live cel			
A 1 Chat	E E	C	D	E	F	G		H	1	J		K
$\frac{1}{2}$ ID	From(III OF Afena I Frame To(Frame	Duration(Fra	ume) MaxVisibleCou	n CurVisibleCo	ount MaxLiveCo	ur CurLiy	reCoun	CurStaticCount	Total AvgSr	eed Active A	
3 1		1 8987	7 8	8986	5	2	5	2	0	(0.37	4.12
4	Export	of Live Event										
5	Arena	From(Frame)	To(Frame)	Duration(Frame)	Live Count	Total Avg. Sp	eed	Activ	e Avg. Speed	Travel	Dist.	
5	1	2	4159	4157	5		3.79		12	.22	525.75	
7	1	4159	8791	4632	4		1.2		10	.35	184.97	
3	1	8791	8814	23	3		0.65			5.6	0.5	
9	1	8814	8987	173	2		0.52		4	.73	2.97	

7. 結果視算(Result Visualization)

Visualization的 Visualization",或 🔁





■ 選擇欲分析之區域



7. 結果視算(Result Visualization)

1 8987	Visualiza	ation								Tri	al Record				
		-				-				A	ttribute	Value			
0" 4'59"					E	1 2					/ideo Source	C:\Prog	ram Files\Grou	upScan\High-Throughput Option\Version	on 1.
Cur Frame 1					1						Arena File	C:\Prog	ram Files\Grou	upScan\High-Throughput Option\Versi	on 1
Cur Time 0"					- 23		-				Arena ID			1	
Video Window Cropping				\sim	r		P	0			Start Time			1	
T 100 B 40 Adjust		1	1				1				Stop Time			8987	
											Duration			8987	
Illustration On		1.8	- y 1	1.0											
O Arena O Video			-												
AdjSpeed															
Display Option		- 14							1						
Sniff 🔽 Trace															
Orient Waist															
					**		100								
C Time Format			1		1 march		100								
	Event Dr	atactad	_	_				्री	Live Cour	at Evont					_
	2 None	TD	From	To	Longth		Front		Live Coul	TD	From	To	Longth	Count	-
	Arena	10	rrom	10	Length		Evenu		1	1	2	4159	4157		
									1	2	4159	8791	4632	4	1
Export Trace Image									1	3	8791	8814	23	3	3
Measure									1	4	8814	8987	173	2	!
Seq Value Hist															
Browsing Control															
GoTo 1															
PlayTo 8987															
Result															
Save Export															
Attr Log In Bin Log In															

測量值輸出

• Seq: 測量項目輸出
• Value: 測量數值即時計算
• Hist: 圖表輸出



Seq: 輸入間隔時間及項目

Measure Sequence Operation Parameter StartTime: 1 (Frame) End Time: 8987 (frame) Interval Size 1800 Measure 1 (20 animal) Moving Distance (apart 1.000000 second)	(frame) Speed Distance		
Save Export Data Column Graph Line Graph Exit	Measure Sequence Output of GroupScan Arena:	3	
	Measure Number:	1	
	Start Time (frame):	1	
	Stop Time (frame):	8987	
	Bin Size (frame):	1800	
	Din	Duration (Frame)	mal) Maring Distance (enert 1 000000 accord)
	Bin	Duration(Frame) (20 and 1 1800(frame)	mai) Moving Distance (apart 1.000000 second)
		2 1801 - 3600(frame)	7397-224720 7983.059827
		3601 - 5400(frame)	9357.307045
	4	5401 - 7200(frame)	8167.11642
		7201 - 8986(frame)	7511.481296
		T T	
	Measure Sequ	ence	
	Partie of the state of the sta	(20 animal) Movin Distance (apart 1.0 second)	
	1804tru 3604tru 5104tru 704tru 886tru		

Value: 選擇項目後按Calculate可即時計算出數值 Hist: 圖表輸出

Measure Calculation	
Measure (20 animal) Moving Distance (apart 1.000000 second)	
Avg. Speed Distance	
Temporal Parameter	
Interval StartTime: 1 (frame) End Time	e: 8987 (frame)
C Event Detected	
Operation Calculate 40416.189314 Log Into	Exit
	Measure Histogram
	Measure Avg. Speed
	Temporal Parameter
	Interval StartTime: 1 (frame) End Time: 8987 (frame)
	C Event Detected
	Histogram Parameter Estimate MinValue 0 MaxValue 100 BinSize 1
	Histogram Export Histogram Graph Exit



	傳統可測得參數	新增參數
SocialScan 社交行為偵 測套組	兩隻用顏色標定的動 物,以其質量重心測得 兩隻動物間的距離	不需用顏色標明,兩隻動物只需有些 微的顏色或對比差異,即可依其相互 移動及位置測得下例參數: •Approach 互相靠近 •Avoidance 互相躲避 •Contact 互相接觸 •Sniffing 互相嗅聞

Social Scan軟體操作步驟



2. 設定背景、產生背景、合成背景及輸入背景

Set Frame As Background:
 以空的片段為背景

Generate Background:
 由有動物的片段產生背景

 Load Background: 載入背景

ta <u>T</u> rial	<u>B</u> ackground	<u>A</u> rena	<u>V</u> isualization	Settings	Vie <u>w</u>
*Bn •	Save <u>F</u> ram	e		(K) NI	ID BKGD S n max b
MOD	Set Frame Concernts F				
	Composite				
	Composite				
	Set Backg				
	Save Back				
	🔶 <u>L</u> oad Back	ground			
nuow Crop	Convert B	ackgrow	nd From <u>R</u> ealTi	me 📕	
Bottom	10				
Right	10				
Adjust		stration			

5-1. 設定事件(Event)準則及偵測分析準則 "Animal Detection and Tracking Settings"

Sett	ings View Help	
	Test Synchronization	
	System Settings Detector Settings	
	Animal Detection and Tracking Settings	
	Event Rule Settings	

nimal Detection and Tracking Settings					
Simple Advanced Animal Size (Area In Pixels) Min: 200 Max: 6000 Default					
Animal O Dark in a light BG O DarkMost in a dark BG Image: C Light in a dark BG Image: C Light Most in a light BG Image: C Multi/Unsure					
Animal Appearance Model Vaule: Black-0 White-255 Range: Low: 0 High: 255					
Animal Detection Threshold: © Set Contrast Level 20 © Automatic: Good Contrast © Automatic: Poor Contrast					
Max Animal Movement Per Frame: 20 pixel					
確定 取消 説明					

5-2. 設定事件(Event	;)準則及偵測	则分析準則
"Event Rule Settings"	SettingsViewHelpTest SynchronizationSystem SettingsDetector SettingsAnimal Detection and TrEvent Rule Settings	acking Settings
Event Rule Settings	×	Social Contact Animal 🛛 🔀
Events Start Rules Stop Rules TTL Pin Out Rules Current 1 Image: Current Image: Current I Social Contact [1 with 2] in Area Cage1 Image: Current Image: Current I Social Contact [2 with 1] in Area Cage1 Image: Current Image: Current I Social Contact [1 with 2] in Area Cage1 Image: Current Image: Current I Social Contact [1 with 3] in Area Cage1 Image: Current Image: Current I Social Contact [2 with 3] in Area Cage1 Image: Current Image: Current I Social Contact [1 with 2] in Area Cage1 Image: Current Image: Current I Social Contact [1 with 2] in Area Cage2 Image: Current Image: Current I Social Contact [2 with 1] in Area Cage2 Image: Current Image: Current I Social Contact [2 with 3] in Area Cage2 Image: Current Image: Current I Social Contact [2 with 3] in Area Cage2 Image: Current Image: Current I Social Contact [2 with 3] in Area Cage2 Image: Current Image: Current I Social Contact [2 with 3] in Area Cage2 Image: Current Image:	TTL Device ● ParPort ● NICard Available Events List ● Social Basic Event ● Social Contact ● Social Contact ● Social Contact ● Social Pollow ● Social Stare ● Social Stare ● Social Dist ● Active Contact ● Passive Contact ● Contact by Part ● Social Mount ● Drug Event ● Mount ● Add Selected Event	Please Select the ID of contacted Animal 1: 1 2 3 4 Animal 2: 1 2 3 4 DK Cancel ILL Cancel Social Approach Animal V Please Select the ID of animals: Animal 1: 1 2 3 4 DK Cancel Cancel V
確定取消	í 說明	[1,2] ≠[2,1]

5-3. 設定事件(Event)準則及偵測分析準則

"Detector Settings"

Sett	ings View Help						
	Test Synchronization						
-	System Settings Detector Settings						
	Animal Detection and Tracking Settings						
	Event Rule Settings						

Detector Settings					×
Non-Social Dete Mon-Social Detector (4	ctor (1) I Social Detector (1)	Non-Social Detector (2)	Non-S Social Detector (3)	Social Detector (3)	
	,,	Save	Load	Default	
Max Animal	3 Content Upda	ate Factor 0.99 N	/erifyLer 15 Edg	geDist Th 1	
Shape Memory Lengt	h: 5 frames D	e-noise Iters 🛛 📕	🔽 Anima	ds with Uniform Cole	
🔲 Social Recognition	a 🔲 Segment Animals i	n Contact 🔽 Animal	with Marks 🔽 Anima	ds of Similar Size	

Ex. Approach Detection

- Dist:
- Angle:
- Move:
- Sequence:

Approach Detection
Action dist < 1000 mm Angle < 30 °
15 Frame Move 1 > 5 2 < 5 mm
Condition: At the end InterDist < 1000 mm
Travel Dist of Animal 1 30 mm
Heading Direction: 💿 Nose 🔿 Movement
Sequence: Approach: N 60 M 55
Normal: N 5 M 4

分析結果

🛐 TopScan - TopView Beh	navior Analyzi	ng System												X
File Data Trial Backg	round Arena	a Visualization Settings View	/ Help											
	■ 	Set Geri Brgd Brgd Save LOAD Brgd Brgd mith max Brgd Brgd	8											
Signal: SocialContact.MPG		Land and a second second second		Arena St	atus									
0 6030	76	No. of the State of the State		Arena	State	Start	Stop	Duration					Comment	
	-1	-	THE PARTY	1	Stop	b	1 44	83 4483					Analyze St	topped
00:00:00 321"														
Frame 4483														
Time 2'29"														
🔽 Analyze														
🔽 Arena		A Contraction of the second	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1											
Design Tracking Event			The											
Display Option		A DUBLING STATISTICS		J										
Sniff/Nose Trace	Illustration			Event										
Label Debug				Event										
□ OverLay 🔽 OnArena					_	- 1				1				
Time Format		~~~ <u>~</u> . ~		10	From	10	Length			Event				
C Time 🛈 Frame			A B	58	3956	3977	21 1	Distance betw Distance betw	een [1 and een [2 and	i 2 j Less I i 1 l Less T	han			_
Update View			2 81 7	59	3976	4134	158		Social 1	Leave [2 fr	com 1]			
Event frames		M Later	$\pi \mathcal{A}$	60	4072	4210	138		Social 3	Leave [2 fr	com 1]			
Others 5 frames		Mar And		61	4093	4210	117		Social :	Leave [1 fr	com 2]			
Result		1 Alertera		63	4149	4216	108		Social Social i	Leave [1 II Leave [2 fr	com 2]			
Reset Save Export		1 the second	1996 - C	64	4372	4484	112	Distance betw	een [1 and	i 2] Less I	han			
Log In Proc TrcImg		•		65	4372	4484	112	Distance betw	een [2 and	i 1] Less T	han			
				66	4386	4484	98	-	Social Co	ntact [1 wi	th 2]			=
Video Window Cropping				67	4406	4411	5	So	cial Sniff	[1 sniff 2	Bodyj			-
Top 0 Bottom 0	Result													
Adjust	Event Statis	tics Social Distance Statistics Sign	nal Debug Infoma	tion										
	Arena	Criteria	Times Durat	ion	Latency	Dist(mm)	V(mm/s) Elong	TAngleSum	AverAngle				
Plan from	1 S	ocial Contact [1 with	9 1	513 33.	8 45	686.16	13.5	9 1.62	-224.98	-4.46				
to	1	Social Approach [1 to 2]	0	0 0.	0									
	1	Social Approach [2 to 1]	0	0 0.	0									
	1	Social Leave [1 from 2]	7	593 13.	2 1817	650.23	32.8	6 1.77	-111.20	-5.62				T
Ready	,													
(2) S	👰 Groups	Scan 🏼 🎒 social scan	🍇 Microsoft W.	. 🧕 т	opScan - T	🖳 cleve	r works	🗾 SocialScar	1 🚺 🊺 d	emo	Сн 🚎 🄇	? ; < ਾ	1 🛃 🌔 下(午 02:09
											0			

<u>資料管理模式 (Data management mode)</u>

• 點選 🔂 或由Data→Enter Data Management Mode

Hor	meCa	geScan -	Home (Cage Behavior	Analyzing	J Syst
File	Data	Video	Cage	Background	Option	Tra
6	E	Inter Data	a Mana	gement Mode		P
Video	1	New Expe	riment			
).\d	0	Del Experi	iment			
0	C	Config Ex	perimer	nt		
00:0	C	Config Ex	perimer	nt DSN/MDB		
Fran	A	Add Attrib	oute			
Tin	0	Del Attrib	ute			
	1	Modify At	tribute			
# ¢	A	Add Trial				
	0	Del Trial				
Vide	1	Modify Tr	ial			
Top	57	rial Data	LogIn			
Left	0	Group Eve	ent Expo	ort		
E	0	Group Att	ribute E	xport		-
L L	-		1112	and the second division of	_	-



整組事件輸出(Group Event Export)

• 在試驗分析之後將多組結果 輸出為一個Excel檔。

	0000 0	//14/2003	09:00:00 A	ami		
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Contraction of the second		7/14/2003	10.00.00 4	M		
Trial Ev	ent Export Wi	zard				
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	Trials		Attributes		Measures	
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(A)	C Range C	Ly De	lete CI	ear		
Nº AI	tranfa o l				Keturn	

• 選擇輸出的試驗和項目。

整組事件輸出(Group Event Export)

• 輸出之Excel檔

Α	В	C	D	E	F	6	Н	1
Trial Num	15							
Trial D	Arena	Treatment	Dosage (ug/r	Date	Time	Events	Times	Duration(Frame)
1	1	Yehicle		7,14/2003	9:00:00 AM	Mouse 1 shifting On Object 1	2	34
1	1	Vehicle		7/14/2003	9:00:00 AM	Mouse 1 shifting On Object 2	1	22
2	2	Drug A	1	7/14/2008	9:00:00 AM	Mouse 1 shifting On Object 1	0	α
2	2	Drug A	1	7/14/2003	9:00:00 AM	Mouse 1 shiffing On Object 2	2	23
3	3	Drug B	1	7/14/2003	9.00.00 AM	Mouse 1 shiffing On Object 1	2	55
3	3	Drug B	1	7/14/2009	9:00:00 AM	Mouse 1 shifting On Object 2	1	20
4	4	Drug C	1	7/14/2003	9:00:00 AM	Mouse 1 shifting On Object 1	1	19
4	4	Drug C	1	7/14/2008	9:00:00 AM	Mouse 1 shifting On Object 2	1	12
5	1	Vehicle		7/14/2008	9.30.00 AM	Mouse 1 shifting On Object 1	2	35
5	1	Vehicle		7/14/2003	9:30:00 AM	Mouse 1 shiffing On Object 2	1	25
6	2	Drug A	1	7/14/2003	9:30:00 AM	Mouse 1 shifting On Object 1	2	123
6	2	Drug A	1	7/14/2003	9:30:00 AM	Mouse 1 shiffing On Object 2	5	119
7	3	Drug B	1	7/14/2003	9:30:00 AM	Mouse 1 shifting On Object 1	1	13
7	3	Drug B	1	7/14/2008	9:30:00 AM	Mouse 1 shiffing On Object 2	0	0
B	4	Drug C	1	7/14/2003	9:30:00 AM	Mouse 1 shiffing On Object 1	1	36
B	4	Drug C	1	7/14/2003	9:30:00 AM	Mouse 1 shiffing On Object 2	1	17
9	1	Vahicle		7/14/2003	10:00:00 AM	Mouse 1 shiffing On Object 1	2	79
9	1	Vehicle		7/14/2003	10:00:00 AM	Mouse 1 shiffing On Object 2	õ	0
10	2	Drug A	1	7/14/2008	10:00:00 AM	Mouse 1 sniffing On Object 1	1	13

多組連續分析(Multi-task analyzing)

將影片檔、實驗區設定、
 事件偵測設定等加入,可
 連續分析多筆影片並自動
 載入結果。



Multi-Task Batch Analyzing List											
Г	Trial	Task List									T ask
		Video File	Background	Calibration	Settings	Analysis From	Τo	Status	Output Folder	Experiment	1001
	1	HCSDEM0.mpg	HCSDEM0.8MP	HCSDEMO, CLB	HomeCageScan_Sgmt#1_End.SET	10.00	370.00	Readv		Def-HCS-RT	Add
	2	HCSDEMD.mpg	HCSDEM0.8MP	HCSEEMO.CLB	HomeCageScan_Sgmt#1_End.SET	10.00	370.00	Readv		Def-HCS-RT 5	Del
	3	HCSDEMD.mpg	HCSDEM0.8MP	HCSDEMO.CLB	HomeCageScan_Sgmt#1_End.SET	10.00	370.00	Readv		Def-HCS-RT 6	Clear
											Save
											Load
											Set
											Setting
											Login
											Experiment

Thank You

